LELAND STANFORD JUNIOR UNIVERSITY

REGISTER FOR 1917-18

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LELAND STANFORD JUNIOR UNIVERSITY

TWENTY-SEVENTH

ANNUAL REGISTER

1917-1918

"The beneficence of the Creator towards man on earth, and the possibilities of humanity, are one and the same."—LELAND STANFORD.

"A generous education is the birthright of every man and woman in America."

—DAVID STARR JORDAN.

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FEBRUARY, 1918

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OFFICE DIRECTORY

[The rooms in the Inner Quadrangle are numbered consecutively, beginning at the left of the main entrance, ten numbers being allotted to each building. In the Outer Quadrangle forty numbers are allotted to each of the larger buildings and ten numbers to each one-story building, beginning with the Assembly Hall and number 120. The Engineering buildings south of the Quadrangles begin with number 500. The Chemistry building is on the west avenue between the Quadrangles and the Museum. Anatomy and Bacteriology are in the old Museum building.]

The administration offices are:

PRESIDENT, room 116.
REGISTRAR, room 110.
ACADEMIC SECRETARY, room 113.
APPOINTMENT SECRETARY, room 119.
ALUMNI SECRETARY, room 112.
MEDICAL ADVISER OF MEN, Encina Gymnasium.
MEDICAL ADVISER OF WOMEN, room 203.
DEAN OF WOMEN, room 114.
STUDENT ADVISER, room 117.
TREASURER, room 250.
COMMITTEE ON PUBLIC HEALTH, room 111.

The various Departmental offices are given in the SCHEDULE and in the DIRECTORY OF OFFICERS AND STUDENTS.

The University Post Office is *Stanford University, California.*

The University Telephone Office is *Palo Alto* (Office and Departmental telephones Palo Alto 900 with local numbers added).

The University Railway Station and Telegraph and Express Office is *Palo Alto, California.*

Requests for *Registers*, blanks, and other printed matter, and inquiries regarding terms of admission, advanced standing, etc., should be addressed to THE REGISTRAR, *Stanford University, California.*

UNIVERSITY CALENDAR

1917

AUTUMN QUARTER

Oct.	1	Monday.....Registration for Autumn Quarter.
Oct.	2	Tuesday.....Instruction begins.
Oct.	5	Friday.....Conferring of Degrees.
Nov.	29	Thursday.....} Thanksgiving Recess.
Dec.	2	Sunday.....}
Dec.	19-21	Wednesday-Friday.....End-Quarter Examinations.

1918

WINTER QUARTER

Jan.	2	Wednesday.....Registration for Winter Quarter.
Jan.	3	Thursday.....Instruction begins.
Jan.	4	Friday.....Conferring of Degrees.
Feb.	22	Friday.....Washington's Birthday.
March	9	Saturday.....Founders' Day.
Mar.	20-22	Wednesday-Friday.....End-Quarter Examinations.

SPRING QUARTER

April	1	Monday.....Registration for Spring Quarter.
April	2	Tuesday.....Instruction begins.
April	5	Friday.....Conferring of Degrees.
May	14	Monday.....Birthday of Leland Stanford, Junior.
June	11-13	Tuesday-Thursday.....End-Quarter Examinations.
June	15	Saturday.....Alumni Day.
June	16	Sunday.....Baccalaureate Sunday.
June	17	Monday.....Commencement.

SUMMER QUARTER

June	18	Tuesday.....Registration for Summer Quarter.
June	19	Wednesday.....Instruction begins.
July	4	Thursday.....Independence Day.
July	24	Wednesday.....First Term ends.
July	25	Thursday.....Second Term ends.
Aug.	29-31	Thursday-Saturday.....End-Quarter Examinations.

AUTUMN QUARTER, 1918-19

Sept.	30	Monday.....Registration for Autumn Quarter.

ADMINISTRATIVE OFFICERS

THE BOARD OF TRUSTEES

[The figures in parentheses indicate year of beginning of service.]

FRANK BARTOW ANDERSON (1912), California and Sansome, San Francisco
‡WILLIAM BABCOCK (1905), San Rafael
WILLIAM B. BOURN (1917), Filoli, San Mateo
FRANK PRENTISS DEERING, A. M. (1916), Nevada Bank Bldg., San Francisco
CHARLES PARMELEE EELLS, A. B. (1905), 2415 Pierce st., San Francisco
JOSEPH DONOHOE GRANT, A. B. (1891), 2200 Broadway, San Francisco
HERBERT CLARK HOOVER, A. B. (1912) Washington, D. C.
TIMOTHY HOPKINS (1885), (Nevada Bank Bldg., S. F.), Menlo Park
SAMUEL FRANKLIN LEIB, LL. B. (1891), First Ntl. Bank Bldg., San Jose
PERCY T. MORGAN (1916), 310 Sansome st., San Francisco
WILLIAM MAYO NEWHALL, B. S. (1912), 260 Calif. st., San Francisco
JAMES LEROY NICKEL (1909), Merchants Exchange Bldg., San Francisco
LEON SLOSS (1891), 310 Sansome st., San Francisco
THOMAS WELTON STANFORD (1893), 142 Russell st., Melbourne, Aus.
VANDERLYNN STOW, A. B. (1906), 2900 Broadway, San Francisco

OFFICERS OF THE BOARD

President: WILLIAM MAYO NEWHALL.
Vice-President: CHARLES PARMELEE EELLS.
Treasurer and Business Manager: VANDERLYNN STOW.
Assistant Secretary and Assistant Treasurer: WILLIAM BABCOCK.
Secretary: LEON SLOSS.

STANDING COMMITTEES OF THE BOARD

Finance: SLOSS, ANDERSON, BABCOCK, LEIB, MORGAN, NEWHALL, NICKEL, STOW.
University: HOPKINS, BOURN, DEERING, EELLS, GRANT, HOOVER, NEWHALL, STANFORD, STOW.
Library: HOPKINS, EELLS, NEWHALL, STOW.
Rules: EELLS, GRANT, NEWHALL, SLOSS.
Grounds: NEWHALL, MORGAN, SLOSS, STOW.

‡Deceased January 23, 1918.

THE FACULTY

[Office and office hours in parentheses; MTWThF unless otherwise specified.]

President: Ray Lyman Wilbur. (116, 10-12, 2-5.)
Registrar: Orrin Leslie Elliott. (110, 8-12, 1:05-4:05, S 8-12.)
Librarian: George Thomas Clark. (Library, 9-4:30.)
Academic Secretary: George Archibald Clark. (113, 8-11, 2-5.)
Dean of Women: Harriet Bradford, (114, MTWThF 9-12, MTTh 2-3.)
Student Adviser: Wayne Leslie Miller. (117, MWF 9-11, 1:30-3:30, TTh 9-12, 2:30-3:30.)
Chaplain: David Charles Gardner. (Vestry, TWThF 8:30-12.)
Appointment Secretary: Elizabeth Burritt Snell. (119, 10-12, 2-4, S 10-12.)
Medical Adviser of Women: Clelia Duel Mosher. (Edith Eugenie Johnson, Acting, beginning December, 1917.) (Roble Gymnasium, 1:45-2:45.)
Medical Adviser of Men: Charles Ernest von Geldern. (Encina Gymnasium, 2:45-6.)

DEPARTMENT EXECUTIVES

[Office in parentheses.]

Anatomy: Frank Mace McFarland. (m7.)
Applied Mathematics: Leander Miller Hoskins. (275.)
Bacteriology and Experimental Pathology: Wilfred Hamilton Manwaring. (m2.)
Botany: Douglas Houghton Campbell. (468.)
Chemistry: Robert Eckles Swain. (Lionel Remond Lenox, winter quarter.) (c44.)
Civil Engineering: Charles David Marx. (271.)
Economics: Murray Shipley Wildman. (Albert Conser Whitaker, winter quarter.) (223.)
Education: Ellwood Patterson Cubberley. (Lewis Madison Terman, winter quarter.) (51.)
Electrical Engineering: Harris Joseph Ryan. (505.)
English: William Herbert Carruth. (Raymond Macdonald Alden, winter quarter.) (209.)
Entomology and Bionomics: Vernon Lyman Kellogg. (Rennie Wilbur Doane, Acting, winter quarter.) (431.)
Geology and Mining: Bailey Willis. (340.)
Germanic Languages: William Alpha Cooper. (40.)

Greek: Augustus Taber Murray. (25.)
History: Ephraim Douglass Adams. (237.)
Latin: Henry Rushton Fairclough. (22.)
Law: Charles Andrews Huston (autumn); Arthur Martin Cathcart (beginning winter quarter).
Mathematics: Robert Edgar Allardice. (70.)
Mechanical Engineering: Guido Hugo Marx (260.)
Medicine: William Ophüls. (San Francisco.)
Anatomy: Frank Mace McFarland. (m7.)
Bacteriology and Experimental Pathology: Wilfred Hamilton Manwaring. (m2.)
Chemistry: Robert Eckles Swain. (c44.)
Hygiene and Public Health: William Freeman Snow. (New York, N. Y.)
Medicine: Albion Walter Hewlett. (Walter Whitney Boardman, beginning winter quarter.) (San Francisco.)
Obstetrics and Gynecology: Alfred Baker Spalding. (San Francisco.)
Pathology: William Ophüls. (San Francisco.)
Pharmacology: Albert Cornelius Crawford. (San Francisco.)
Physiology: Ernest Gale Martin. (482.)
Surgery: Stanley Stillman. (John Francis Cowan, beginning winter quarter.) (San Francisco.)
Military Training: Jens Bugge. (Walter S. Volkmar, beginning winter quarter.) (Encina Gym.)
Philosophy: Henry Waldgrave Stuart. (93.)
Physics: Fernando Sanford. (390.)
Physiology: Ernest Gale Martin. (482.)
Psychology: Frank Angell. (399.)
Romanic Languages: Oliver Martin Johnston. (246.)
Zoology: Charles Henry Gilbert. (443.)

Library: George Thomas Clark.
Memorial Church: David Charles Gardner.
Museum: Pedro J. Lemos.
Physical Training—
Encina Gymnasium: Ernesto Ray Knollin.
Roble Gymnasium: Clelia Duel Mosher. (Edith Eugenie Johnson, beginning December, 1917.)

STANDING COMMITTEES OF THE ACADEMIC COUNCIL

[The first named member in each Committee is Chairman.]

ADVISORY BOARD

Hoskins, Cathcart, Fairclough, Gilbert, Green, McFarland, C. D. Marx, Sanford (Secretary), Swain.

ADMINISTRATIVE COMMITTEES

1. Student Affairs: Lesley, Eckart, Kirkwood, Moreno, West, Miss Bradford.
2. Athletics: Angell, Murray, J. P. Smith.
3. Public Exercises: Bassett, H. C. Brown, P. A. Martin, Tatlock, S. W. Young.
4. Literary Contests: Bassett, Cathcart, P. A. Martin, S. A. Smith.
5. Public Health: Mitchell, Miss Bradford, Mosher.
6. Scholarship: Gilbert, Elliott, Fish, Johnston, Show, Whittier.
7. Public Entertainments: (Omitted for 1917-18.)
8. Vocational Guidance: J. G. Brown, Fish, Hall, Huston, West.

ACADEMIC COMMITTEES

1. Executive Committee: Wilbur, Alden, Cathcart, G. A. Clark, Elliott, Fish, Foster, Gilbert, Green, McFarland, Stuart, Swain, Townley.
2. Admission and Advanced Standing: Elliott, Cannon, Eckart, Tatlock, Townley.
3. Registration: Elliott, Abrams, Manning, Snyder, West.
4. Graduation: Wildman, Elliott, Rendtorff, Tolman, Vernier.
5. Schedule and Examinations: Robinson, H. C. Brown, Elliott, P. A. Martin, Moreno.
6. Graduate Study: Franklin, Adams, Alden, Durand, Fairclough, Hoskins, E. G. Martin, Peirce, Stuart, Wildman, Willis.
7. Library: Swain, Adams, Cooper, E. G. Martin, G. H. Marx.
8. University Publications: Kellogg, Adams, Briggs, G. T. Clark, Townley.

FACULTY AND OTHER OFFICERS

[Name; office; residence telephone; title; residence; post-office. Post-office in all cases *Stanford University* except where university residence is followed by initial letters of town ('p' indicates *Palo Alto* post-office; 'Mayfield-m,' *Mayfield* post-office; etc.). Street address *Palo Alto* or *Campus* unless otherwise named.

The dagger (†) marks the names of men who are married.

Brackets indicate 'absent on leave' for the academic year. The superior number 1 indicates absence for the autumn quarter only; 2 for the winter quarter only; 23 for winter and following quarter or quarters.]

†ANDERSON, MELVILLE BEST,
Professor of English Literature, Emeritus, Menlo Park
A. M., Butler University, 1877; LL. D., Aberdeen, 1906. At Stanford since 1891, Emeritus since 1910.

†BARKAN, ADOLPH, SF, Fillmore 22
Professor of Structure and Diseases of Eye, Ear, and Larynx, Emeritus, 2209 Laguna, San Francisco
M. D., University of Vienna, 1866; LL. D., University of Glasgow, 1901. At Stanford since 1909, Emeritus since 1911.

†BRANNER, JOHN CASPER, PA 1010
President, Emeritus, 13 Alvarado
B. S., Cornell, 1882; Ph. D., Indiana, 1885; LL. D., Arkansas, 1897, Maryville College, 1909, California, 1915; D. Sc., Chicago, 1916. Professor of Geology 1891-1915, Vice-President, 1898-1913, President, 1913-1915, Emeritus since 1916.

†GRIFFIN, JAMES OWEN, PA 1054
Professor of German, Emeritus, 14 Alvarado
Graduate Pennsylvania State Normal School, 1873. At Stanford since 1891, Emeritus since 1917.

†HIRSCHFELDER, JOSEPH OAKLAND, SF, West 757
Clinical Professor of Medicine, Emeritus, 1329 Geary, San Francisco
M. D., University of Leipzig, 1876. At Stanford since 1909, Emeritus since 1912.

†JENKINS, OLIVER PEEBLES, PA 1040J
Professor of Physiology and Histology, Emeritus, 3 Lasuen
A. B., Moore's Hill College, 1869, A. M., 1872; M. S., Indiana, 1886, Ph. D., 1889; LL. D., Moore's Hill College, 1916. At Stanford since 1891, Emeritus since 1916.

†JORDAN, DAVID STARR, PA 1001
Chancellor, Emeritus, Xazmin House
M. S., Cornell, 1872; M. D., Indiana Medical College, 1875; Ph. D., Butler College, 1878; LL. D., Cornell, 1886, Johns Hopkins, 1902, Illinois College, 1903, Indiana, 1909, California, 1915, Western Reserve, 1915. President of the University, 1891-1913, Chancellor, 1913-16, Emeritus since 1916.

MARTIN, LILLIEN JANE, SF, Franklin 2327
Professor of Psychology, Emeritus, 729 Jones, San Francisco
A. B., Vassar, 1880; M. L. A. and hon. Ph. D., Bonn, 1913. At Stanford since 1899, Emeritus since 1916.

†STILLMAN, JOHN MAXSON, PA 1048
Professor of Chemistry, Emeritus, 2 Alvarado

Ph. B., California, 1874, Ph. D., 1885, LL. D., 1916. At Stanford since 1891, Emeritus since 1917.

---

†ABRAMS, LEROY, PA 1125
Associate Professor of Botany, 23 Salvatierra

A. B., Stanford, 1899, A. M., 1902; Ph. D., Columbia, 1910. Acting Professor of Botany, University of Idaho, 1899-1900; Assistant in Botany, Leland Stanford Junior University, 1900-02, Instructor, 1902-04; Fellow in Botany, Columbia University, 1904-05; Assistant Curator, Division of Plants, United States National Museum, 1905-06; Lecturer in Botany, University of California, first semester, 1915-16. At Stanford 1900-04 and since 1906.

†ADAMS, EPHRAIM DOUGLASS, PA 1058
Professor of History, 27 Salvatierra

A. B., Michigan, 1887, Ph. D., 1890; LL. D., Grinnell, 1917. Principal of High School, McGregor (Ia.), 1887; Principal of High School, Saginaw (Mich.), 1889; Special Agent in Charge of Street Railways, Eleventh Census, Washington (D. C.), 1890; Assistant Professor and afterward Professor of European History, University of Kansas, 1891-1902. At Stanford since 1902.

†ADDIS, THOMAS, Sausalito, 194
Associate Professor of Medicine, 57 Miller ave., Sausalito-s

M. B. Ch. B., Edinburgh, 1905, M. D. and M. R. C. P., 1908. Clinical Assistant, Medical Out-Patient Department, Royal Infirmary of Edinburgh, 1908, 1911; Medical Registrar, Leith Hospital, 1911; Carnegie Research Scholar and Fellow, 1908-11; Director of the Clinical Laboratory, Lane Hospital, since 1911. At Stanford since 1911.

†ALDEN, RAYMOND MACDONALD, PA 288
Professor of English, 427 Embarcadero Road

A. B., Pennsylvania, 1894; A. M., Harvard, 1896; Ph. D., Pennsylvania, 1898. Instructor in English, Columbia University, 1894-95; Assistant in English, Harvard University, 1896-97; Senior Fellow in English, University of Pennsylvania, 1898-99, Instructor, 1899-1901; Assistant Professor of English Literature and Rhetoric, Leland Stanford Junior University, 1901-09, Associate Professor of English, 1909-11; Professor of English, University of Illinois, 1911-14; Acting Associate Professor, University of Chicago, Summer Quarter, 1910; Acting Professor, Harvard University, Summer Session, 1912, Columbia University, 1916. At Stanford 1901-11 and since 1914.

†ALDERSON, HARRY EVERETT, SF, Fillmore 4548
Associate Clinical Professor of Medicine, 2649 Green, SF-sf

M. D., California, 1900; Assistant in Skin Diseases, Medical Department of University of California, 1906-12; Professor of Art Anatomy, California School of Design, 1906-12; Chief of Skin Clinic, San Francisco Fruit and Flower Mission. At Stanford since 1912.

ALLARDICE, ROBERT EDGAR, PA 1036
Professor of Mathematics, County Road

A. M., Edinburgh, 1882. Baxter Scholar in Mathematics, University of Edinburgh, 1882-83, Drummond Scholar in Mathematics, 1883-84; Assistant Professor of Mathematics, University of Edinburgh, 1883-92. At Stanford since 1892.

[2]†ALLEN, CLIFFORD GILMORE, PA 1031X
Associate Professor of Romanic Languages, 25 Alvarado

A. B., Boston, 1900; A. M., Stanford, 1903; Docteur de l'Université de Paris, 1906. Student, University of Paris, 1903-04; Fellow of Boston University and Student at Universities of Paris and Madrid, 1904-05. At Stanford since 1901.

ANGELL, FRANK, PA 87
Professor of Psychology, 1200 Bryant

B. S., Vermont, 1878; Ph. D., Leipzig, 1891; L. H. D., Vermont, 1892. Teacher in Washington (D. C.) High School, 1880-87; Assistant Professor of Psychology, Cornell University, 1891-92. At Stanford since 1892.

†BACHER, JOHANN ADOLPH, SF, Pacific 334
Clinical Instructor in Surgery (Otology, Rhinology, Laryngology), 1635 Lake, SF-sf

A. B., Stanford, 1899; M. D., Harvard, 1911. At Stanford since 1917.

†BARKAN, HANS, SF, Prospect 5788
Clinical Instructor in Surgery (Ophthalmology), 608 Lake, SF-sf

A. B., Stanford, 1905; M. D., Harvard Medical School, 1910. Assistant in Pathology, Harvard Medical School, 1910-11, Instructor, 1911-12; Pathologist to the Long Island Hospital and Boston City Almshouse, 1911-12; Voluntary Assistant, II, Eye Clinic, Vienna, 1912-14. At Stanford since 1914.

[†BARNETT, GEORGE DE FOREST, SF, West 8004
Instructor in Medicine, In Government Service]

A. B., Stanford, 1906, A. M., 1909, M. D., 1913. Instructor in Chemistry, Leland Staford Junior University, 1909-10; Student, Johns Hopkins Medical School, 1910-12; Senior House Officer, Lane Hospital, 1914-15. At Stanford since 1915.

[2]†BASSETT, LEE EMERSON, PA 1080
Associate Professor of English, 9 Cabrillo

A. B., Stanford, 1901. Graduate, Cumnock School of Oratory, Los Angeles, 1898; Instructor in Public Speaking, University of Southern California, 1898-99; Student, School of Expression, Boston, 1901; Student, Department of Literature, University of Chicago, summer, 1904; Student at Oxford, 1907-08. At Stanford since 1901.

[BEASLEY, SHADWORTH O., SF, Garfield 2080
Assistant Clinical Professor of Obstetrics and Gynecology, In Government Service]

M. D., Cooper Medical College, 1897. Acting Assistant Surgeon, U. S. A., 1898; 1st Lieutenant and Assistant Surgeon, U. S. Vol., 1899; Captain and Assistant Surgeon, U. S. Vol., 1900; Major and Surgeon, U. S. Vol., 1901-03; Assistant in Anatomy, Cooper Medical College, 1904-06; Assistant in Surgical Clinic, 1903-06, Assistant Genito-Urinary Clinic, 1909-11; American Red Cross Serbian Unit 3, 1915. At Stanford since 1913.

BERGER, ALICE RUTH,
Instructor in Chemistry, 73 No. 6th, SJ

A. B., Stanford, 1908, A. M., 1913. At Stanford since 1911.

†BERING, ROBERT EUGENE, SF, Market 8048
Lecturer on Drug Addictions (Neurology), 1500 Page, SF-sf

[23]†BINGHAM, JOSEPH WALTER,
Professor of Law, In Government Service

A. B., Chicago, 1902, J. D., 1904. In practice of law, Chicago, 1904-05; Acting Assistant Professor of Law, Cornell University, 1905-07. At Stanford since 1907.

†BLAISDELL, FRANK ELLSWORTH, SF, Pacific 3482
Assistant Professor of Surgery, 1520 Lake, SF-sf

M. D., Cooper Medical College, 1889. Demonstrator of Anatomy, Cooper Medical College, 1903, Instructor in Biology and Embryology, 1900-09, in His-

tology, 1907-09, Assistant Professor of Anatomy, 1904-05, Associate Professor, 1907-12. At Stanford since 1910.

BLANCHARD, MARY WILLIARD,
Instructor in Physical Training, 751 Webster-p

A. B., Mt. Holyoke, 1907. Sometime student at Columbia University, Harvard University Summer School, University of California, University of Southern California, Gilbert School of Dancing, Boston, Chalif's School of Dancing, New York; sometime Head of Women's Gymnasium, Swarthmore College; sometime Teacher in Manual Arts High School, Los Angeles. At Stanford since 1917.

BLICHFELDT, HANS FREDERIK, PA 435
Professor of Mathematics, College Terrace

A. B., Stanford, 1896; Ph. D., Leipzig, 1898. At Stanford since 1898.

†BOARDMAN, WALTER WHITNEY, SF, Fillmore 2506
Assistant Professor of Medicine (Actinography), 2259 Vallejo, SF-sf

M. D., Cooper Medical College, 1909. Assistant in Phipps Dispensary, Johns Hopkins Hospital, 1910, Assistant in Actinography and Externe in Gynecology, 1911; Director of Actinography, Lane Hospital, 1912. At Stanford since 1912.

†BOEZINGER, BRUNO, PA 196
Assistant Professor of German, 176 Bryant-p

A. B., Fort Worth University, 1894, A. M., 1895; Ph. D., Stanford, 1910. Instructor in German, North Texas Normal School, 1895-98; Principal, German Department, San Antonio (Texas) H. S., 1899-1906; Instructor in German, Summer School, University of Texas, 1896. At Stanford since 1906.

BOEZINGER, LYDIA MARIE, SF, West 659
Secretary to Dean of Medical School, 2401 Sacramento, SF-sf

At Stanford since 1912.

BRADFORD, HARRIET, L 34R1, PA 1203
Dean of Women, 2 Lasuen

A. B., Bryn Mawr, 1915. At Stanford since 1916.

†BRANDSTEN, ERNST M., PA 869J
Instructor in Physical Training, Stanford Park

Teacher of Swimming, Municipal Baths, Stockholm, Sweden, 1905; Swimming Coach, Neptune Swimming Club, Stockholm, 1906, University of California, 1911, 1913-15. At Stanford since 1915.

BRANDSTEN, (MRS.) GRETA JOHANNSEN, PA 869J
Instructor in Physical Training, Stanford Park

At Stanford since 1916.

†BRIGGS, WILLIAM DINSMORE, PA 260M
Associate Professor of English, 249 Lowell-p

A. B., Stanford, 1896; A. M., Harvard, 1899, Ph. D., 1900. Student, Johns Hopkins University, 1896-97; Instructor in English and German, University of Vermont, 1900-01; Instructor in English, Western Reserve University, 1901-06. At Stanford since 1906.

[†BRODRICK, RICHARD GODFREY,
Lecturer in Hygiene and Public Health, In Government Service]

M. D., Cooper Medical College, 1892. Assistant Surgeon, U. S. Navy, 1893, Naval Medical School, New York, 1893-94, Asiatic Station, 1894-98; Past Assistant Surgeon, U. S. Navy, 1896, retired from active duty, 1899; Student, Vienna, 1899-1902; Health Officer, San Francisco, 1908-10, 1912; Executive

Secretary, San Francisco Association for the Study and Prevention of Tuberculosis, 1910-11. At Stanford since 1912.

BROOKS, LUCIA MAY, PA 1025
Chief of Serial Department, Library, 1 Salvatierra

Special Student, University of Minnesota, 1889-95; Cataloguer, University of Minnesota Library, 1905-09. At Stanford since 1910.

†BROWN, HAROLD CHAPMAN, PA 1006
Associate Professor of Philosophy, Cooksey Lane

A. B., Williams, 1901; A. M., Harvard, 1903, Ph. D., 1905; Student, University of Berlin, 1903-04; Assistant in Philosophy, Harvard University, 1904-06; Instructor in Philosophy, Columbia University, 1906-14. At Stanford since 1914.

BROWN, JOSEPH GRANT, PA 461M
Assistant Professor of Physics, 1013 Ramona-p

A. B., Stanford, 1901, A. M., 1903. Graduate, Illinois State Normal University, 1894, Instructor in Physics and Chemistry, 1894-98. At Stanford since 1900.

[BROWN, JOSEPH RICHARD,
Clinical Instructor in Obstetrics and Gynecology,
In Government Service]

A. B., Santa Clara, 1907; M. D., Georgetown University, 1911. Assistant Demonstrator in Anatomy, Georgetown University, 1911. At Stanford since 1915.

[BUCKINGHAM, ELISABETH LEE,
Instructor in English, New York, N. Y.]

A. B., Stanford, 1910, A. M., 1914. Student, Columbia College of Expression, Summer, 1913; Teacher of Public Speaking, State Normal School, San Jose, 1914; Student, Columbia University, Summer Session, 1916, and 1917-18. At Stanford since 1911.

[23]†BUGGE, JENS,
Professor of Military Science and Tactics, In Gov't Service

Major, U. S. Army, Retired.

BURKE, WILLIAM EDMUND,
Instructor in Chemistry, Menlo Heights

A. B., Stanford, 1907. Assistant Chemist, Experiment Station of Hawaiian Sugar Planters' Association, Honolulu, 1907-08. At Stanford since 1914.

†BURLINGAME, LEONAS LANCELOT, PA 1144
Associate Professor of Botany, 24 Alvarado

Ph. B., Ohio Northern University, 1901; A. B., Chicago, 1906, Ph. D., 1908. Instructor in Biology, Ohio Northern University, 1901-04; Fellow in Botany, University of Chicago, 1906, Assistant, 1906-08. At Stanford since 1908.

CAMPBELL, DOUGLAS HOUGHTON, PA 1036
Professor of Botany, County Road

Ph. M., Michigan, 1882, Ph. D., 1886. Teacher of Biology, Detroit High School, 1882-86; Student at Bonn, Tübingen, and Berlin, 1886-88; Professor of Botany, Indiana University, 1888-91. At Stanford since 1891.

[1]†CANNON, HENRY LEWIN, PA 1046
Associate Professor of History, 301 Addison

A. B., Western Reserve, 1893; Ph. D., Pennsylvania, 1898. Student, Harvard University, 1893-94, Yale University, 1896-97; Fellow in European History, University of Pennsylvania, 1897-98; Instructor in History, University of Cincinnati, 1900-03. At Stanford since 1903.

[2]†CARRUTH, WILLIAM HERBERT, PA 299
Professor of Comparative Literature, 11 Mirada ave.

A. B., Kansas, 1880, A. M., 1883; A. M., Harvard, 1889, Ph. D., 1893. Student, Universities of Berlin and Munich, 1885-86; Morgan Fellow at Harvard University, 1888-89; Instructor in English, University of Kansas, 1879-80, Assistant Professor of Modern Languages, 1880-82, Professor, 1882-89, Professor of German, 1889-1913, Vice-President, 1901-13; Professor of German Literature, University of Wisconsin, Summer Session, 1907; President, Central Division American Modern Language Association, 1894-97. At Stanford since 1913.

†CATHCART, ARTHUR MARTIN, PA 197
Professor of Law, and Acting Dean of the Law School, 1215 Emerson

A. B., Stanford, 1896. Student, Harvard University, 1896-97; Registered Office Clerk with Attorneys of Colorado Supreme Court, 1900-02; Attorney at Law, Colorado Springs (Colo.), 1903-04; Lecturer in Law, University of California, Summer Session, 1908; Professor of Law, University of Chicago, Summer Quarter, 1911. At Stanford since 1904.

†CHENEY, WILLIAM FITCH, SF, Pacific 2573
Clinical Professor of Medicine, 33 Spruce, SF-sf

B. L., California, 1885; M. D., Cooper Medical College, 1889. Professor of Principles and Practice of Medicine, Cooper Medical College, 1898-1912. At Stanford since 1909.

†CLARK, ARTHUR BRIDGMAN, PA 1023
Professor of Education (Graphic Art), 4 Cabrillo

B. Ar., Syracuse, 1888, M. Ar., 1891. Director of Trade Schools and Instructor in Drawing, New York State Reformatory, Elmira (N. Y.), 1888-89; Instructor in Architecture, Syracuse University, 1889-92; Student in Painting, New York School of Art and Academie Carmen, Paris, 1898-99; Instructor in Pottery, California School of Arts and Crafts, Berkeley, Summer Session, 1913, 1914; Director, San Francisco Art Association, since 1917. At Stanford since 1892.

[23]†CLARK, GEORGE ARCHIBALD, PA 1024
Academic Secretary, 7 Alvarado

B. L., Minnesota, 1891, A. M., 1911. Secretary, U. S. Fur Seal Commission, 1896-98; Special Investigator, Bureau of Fisheries, Fur Seal Investigation on the Pribilof Islands, 1909, 1912, 1913. At Stanford since 1891.

†CLARK, GEORGE THOMAS, PA 526W
Librarian, 27 Alvarado

B. S., California, 1886. Assistant Librarian, University of California, 1886-87; Deputy State Librarian, California State Library, 1887-90, Classifier, 1890-94; Librarian, San Francisco Public Library, 1894-1907. At Stanford since 1907.

†CLARK, JAMES CAMERON, PA 782J
Assistant Professor of Electrical Engineering, 151 Embarcadero-p

B. S., Iowa State College, 1907; M. E. E., Harvard, 1912; Engineering Apprentice Course, Westinghouse Electric & Manufacturing Company, 1907-09; Instructor in Electrical Engineering, Case School of Applied Science, 1909-11. At Stanford since 1912.

[†CLARK, WILLIAM REDWOOD PRICE, SF, West 1827
Clinical Instructor in Medicine, In Government Service]

M. D., Cooper Medical College, 1899. Assistant Visiting Physician, City and County Hospital, San Francisco, 1901-04; Instructor in Medicine, Cooper Medical College, 1905-11; Visiting Physician, Clinic of the San Francisco Asso-

ciation for the Study and Prevention of Tuberculosis, 1909-12; Visiting Physician, City and County Tuberculosis Hospital, San Francisco, 1911-12. At Stanford since 1911.

[1]§†CLEVENGER, GALEN HOWELL, PA 809
Research Professor of Metallurgy, 381 Hawthorne-p

B. S., South Dakota School of Mines, 1901, E. M., 1908; A. M., Columbia, 1903; Engineer, Stanford, 1906. Superintendent Tailings Plant Operating Cyanide Process, Rapid City (S. D.), 1899-1901; Assayer and Chemist, Dakota Mining Co., Deadwood (S. D.), 1901-02; Research Metallurgist, National Smelting Co., Rapid City (S. D.), and Horseshoe Mining Co., Terry (S. D.), 1903-04; Special Assistant U. S. Geological Survey, in charge of Electric Smelting Experiments at Portland (Or.), 1904-05; Consulting Metallurgical Engineer for companies operating in the United States, Mexico, and Central America; Special Study of Hydro-Metallurgical Methods in Mexico, 1906-09. At Stanford 1904-06 and since 1909.

†CONGDON, EDGAR DAVIDSON, PA 396R
Assistant Professor of Anatomy, 330 Coleridge-p

A. B., Syracuse, 1901, A. M., 1902; Ph. D., Harvard, 1909. Austin Teaching Fellow in Zoology, Harvard University, 1906-09; Hooper Traveling Fellow in Zoology of Harvard University, at University of Zürich, 1909-10; Sheldon Traveling Fellow in Zoology of Harvard University, at Biologische Versuchs Anstalt and K. K. Institut für Radiumforschungen, Vienna, 1910-11; Instructor in Embryology, Cornell University Medical College, 1911-12. At Stanford since 1912.

[CONNELL, JOHN TIMON,
Instructor in Bacteriology, Ann Arbor, Mich.]

B. S., Michigan, 1916. Teaching Assistant in Bacteriology and Hygiene, University of Michigan, Summer Session, 1916. At Stanford since 1916.

†COOPER, CHARLES MINER, SF, Fillmore 1821
Associate Clinical Professor of Medicine (beginning winter quarter), 2550 Buchanan, SF-sf

M. B., Ch. B., Edinburgh, 1897. Resident House Physician and House Surgeon, Royal Infirmary, Edinburgh, and Children's Hospital, Edinburgh, 1898-99; Assistant Demonstrator in Anatomy, University of Edinburgh, 1899; Instructor in Clinical Medicine and in Clinical Surgery, University of California, 1902-05; Associate Professor of Internal Medicine and Director of the X-Ray Laboratory, Cooper Medical College, 1909-11. At Stanford since 1918.

†COOPER, WILLIAM ALPHA, PA 593
Professor of German, 35 Salvatierra

A. B., Marietta, 1892, A. M., 1897, L. H. D., 1917. Student, Universities of Bonn, Leipzig, and Paris, 1892-94; Instructor in German and French, Marietta College, 1895-99, Professor, 1899-1901. At Stanford since 1901.

†COOVER, JOHN EDGAR, PA 933
Fellow in Psychic Research, and
Assistant Professor of Psychology, 11 Salvatierra

A. B., Stanford, 1904, A. M., 1905, Ph. D., 1912. At Stanford since 1912.

COSGRAVE, MILLICENT MARY, SF, Douglas 404
Instructor in Medicine (Pediatrics), 2619 Octavia, SF-sf

M. D., Cooper Medical College, 1902. Assistant, Children's Clinic, Cooper Medical College, 1904-08; Assistant, Medical Clinic, San Francisco Polyclinic, 1904-13; Chief, Gynecological Clinic, San Francisco Fruit and Flower Mission, 1906-13.

§ Resigned December, 1917.

†Cowan, John Francis, SF, Prospect 4827
Associate Professor of Surgery, 1875 California, SF-sf

A. B., Stanford, 1902; M. D., Cornell University Medical College, 1910; Assistant and Acting Instructor in Physiology, Leland Stanford Junior University, 1903-06; Instructor in Physiology, Cornell University Medical College, 1906-09; Interne, New York Hospital, 1910-12, Resident Surgeon, 1912-13. At Stanford since 1913.

†Crawford, Albert Cornelius, SF, Franklin 6620
Professor of Pharmacology, Warren Apts., SF-sf

M. D., College of Physicians and Surgeons, Baltimore, 1893. Student at Johns Hopkins University, 1887-90, 1891-94, 1903; Assistant in Pharmacology, Johns Hopkins Medical School, 1894-1900; Pharmacologist, Bureau of Plant Industry, United States Department of Agriculture, 1904-08; Physiologist, Bureau of Animal Industry, United States Department of Agriculture, 1908-10. At Stanford since 1910.

†Cross, Charles Norman, PA 1040W
Assistant Professor of Mechanical Engineering, 9 Salvatierra

M.E., Cornell, 1906. Assistant Engineer, Long Island State Hospital, Brooklyn (N. Y.), 1905; Dynamo and Switchboard Attendant with the New York Edison Co., New York City, 1905-06; Electrician with the Lackawanna Steel Co., Buffalo (N. Y.), 1906; with Turbine Research Department of General Electric Company, Lynn (Mass.), 1914-15. At Stanford since 1906.

[2]†Cubberley, Ellwood Patterson, PA 1019
Professor of Education, and Dean of the School of Education, 12 Cabrillo

A. B., Indiana, 1891; A. M., Columbia, 1902, Ph. D., 1905. Instructor in Science, Ridgeville College (Ind.), 1891; Professor of Physical Science, Vincennes University (Ind.), 1891-93, President, 1893-96; Superintendent of City Schools, San Diego (Cal.), 1896-98; Honorary Fellow, Columbia University, 1901-02, 1904-05; Professor of Education, University of California, Summer Sessions, 1901, 1906, University of Chicago, Summer Quarter, 1910, Harvard University, second half-year, 1910-11; Visiting Professor, Columbia University, Summer Sessions, 1907, 1914, 1916, second half-year, 1915-16. At Stanford since 1898.

†Cushing, Oscar Kennedy, SF, Pacific 987
Lecturer in Law, 37 7th av., SF-sf

[1]†Cutter, Lawrence Edminster, PA 459M
Assistant Professor of Mechanical Engineering, 627 Webster-p

A. B., Stanford, 1906. Machinist Apprentice and Journeyman, Union Iron Works, San Francisco, 1895-99, 1899-1902, 1903, 1904, Draftsman, 1905, 1906. At Stanford since 1906.

†Dailey, Morris Elmer, SJ, 1449
Lecturer in Education, San Jose-sj

A. M., Indiana, 1897; LL. D., Drake, 1901. Superintendent of City Schools, Fresno (Cal.), 1897-99; Vice-President and Teacher of History, San Jose State Normal School, 1890-1900, President since 1900.

[1]†Davidson, Percy Erwin, PA 1442R1
Associate Professor of Education, Menlo Heights

A. B., Stanford, 1898; A. M., Harvard, 1905; Ph. D., Columbia, 1914. Teacher, Grammar and High Schools, San Diego (Cal.), 1898-1900; Supervisor of History and English Teaching, San Francisco State Normal School, 1900-03; Assistant in Education, San Diego State Normal, 1903-04; Graduate Student, Teachers' College, Columbia University, 1905-07; Instructor in Logic and History of Education, New York Training School for Teachers, 1906-07. At Stanford since 1907.

De Camp, Joseph Edgar, PA 1013
Instructor in Psychology, Encina Hall

A. B., Arkansas College, 1905; A. M., Michigan, 1912, Ph. D., 1914. Assistant in Psychology, University of Michigan, 1912-13, and Summer Session, 1914. Fellow in Psychology, 1913-14; Assistant in Psychology, University of Illinois, 1914-15; Instructor in Psychology, University of California, 1915-16 and Summer Session, 1916. At Stanford since 1916.

†Dickson, Ernest Charles, SF, Fillmore 1271
Assistant Professor of Medicine, and
Medical Adviser of Medical Students, 2294 Broderick, SF-sf

A. B., Toronto, 1904, M. B., 1906. Assistant Demonstrator in Physiology, University of Toronto, 1904-05, George Brown Research Scholar, 1906-07; Assistant Resident Physician, John Hopkins Hospital, 1907-08; Instructor in Pathology and Bacteriology, Cooper Medical College, 1908-10; Fellow of the Rockefeller Institute for Medical Research, 1910-13. At Stanford since 1910.

†Dietrich, Waldemar Fenn, PA 1211
Assistant Professor of Metallurgy, 1100 Bryant-p

A. B., Stanford, 1913, Engineer, 1914. Acting Instructor in Mining, Leland Stanford Junior University, 1913-14, Engineer with Copper Queen Consolidated Mining Company, Bisbee, Ariz., 1914-15; Engineer and later Assayer with Consolidated Arizona Smelting Company, Humboldt, Ariz., 1916. At Stanford 1913-14 and since 1916.

†Dillon, James Root, SF, Fillmore 3071
Clinical Instructor in Surgery (Genito-Urinary),
2664 Greenwich, SF-sf

A. B., Stanford, 1908; M. D., Cooper Medical College, 1912. At Stanford since 1913.

†Doane, Rennie Wilbur, PA 792R
Associate Professor of Entomology, 527 Homer-p

A. B., Stanford, 1896. Assistant in Zoology and Botany, Washington State College, 1896-99, Assistant Professor of Zoology and Entomology, 1899-1901; Superintendent Fisheries Experiment Station, Keyport (Wn.), 1901-03. At Stanford since 1905.

†Drew, Elmer Reginald, PA 362
Assistant Professor of Physics, 1321 Waverley-p

B. S., California, 1888; Ph. D., Cornell, 1903. Student, University of Chicago, 1897-98, University of Berlin, 1903-05; Assistant in Physics, University of California, 1889-92, Instructor, 1892-1902. At Stanford since 1905.

Duffus, Robert Luther, PA 154
Lecturer in Journalism, 943 Scott-p

A. B., Stanford, 1910.

[†Durand, William Frederick, PA 1076
Professor of Mechanical Engineering, In Government Service

Graduate U. S. Naval Academy, 1880; Ph. D., Lafayette, 1888. Engineer Corps, U. S. Navy, 1880-87; Special Duty as Assistant Professor of Mechanical Engineering, Lafayette College, 1883-85, Worcester Polytechnic Institute, 1887; Professor of Mechanics and Superintendent of Mechanical Department, Michigan State Agricultural and Mechanical College, 1887-91; Professor of Marine Engineering and Principal Graduate School of Naval Architecture and Marine Engineering, Cornell University, 1891-1904. At Stanford since 1904.

†Eaton, Louis H., PA 857
Organist, 431 University ave-p

At Stanford since 1913.

†Eaves, James, SF, Fillmore 3446
Clinical Instructor in Surgery, 2511 Octavia, SF-sf

M. B. Ch. B., Edinburgh, 1909. Assistant, Guy's Hospital, London, 1910-11. At Stanford since 1911.

†Eckart, William Rankine, PA 227
Professor of Mechanical Engineering, 1445 Bryant-p

M. E., Cornell, 1895. Mechanical Engineer, Siemens Halske Electric Co., Chicago, 1895-96; Construction Engineer, Allison Ranch Mine, Grass Valley (Cal.), 1896-98; Testing Work for Fraser & Chalmers, in Hawaii and Mexico, 1898-99; with W. R. Eckart, Consulting Engineer, Hydraulic Power Plants and Mining Work, 1899-1903, summers of 1904-14; Consulting Engineer, Geary St. P. & O. R. R., San Francisco, 1902-06, Columbia Steel Company since 1915. At Stanford since 1903.

†Elliott, Orrin Leslie, PA 1045
Registrar, 5 Cabrillo

Ph. B., Cornell, 1885, Ph. D., 1890. Fellow in History and Political Science, Cornell University, 1885-86, Instructor in English, 1886-91, Assistant Registrar and President's Secretary, 1890-91. At Stanford since 1891.

†Elmore, Jefferson, PA 1114J
Associate Professor of Latin, 1134 Emerson-p

A. B., Stanford, 1895, A. M., 1895, Ph. D., 1901. Principal of Merced County High School, 1895-97; Student, Universities of Bonn and Berlin, 1901-02. At Stanford since 1898.

Eloesser, Leo, SF, West 1400
Assistant Clinical Professor of Surgery, 1132 Filbert, SF-sf

B. S., University of California, 1900; M. D., Heidelberg, 1907. Volunteer Assistant, Surgical Clinic, Heidelberg, 1906; Assistant, Cancer Institute, Heidelberg, 1906-07; Volunteer Assistant, Royal Surgical Clinic, Kiel, 1908-09; Volunteer Assistant, August Hospital, Berlin, 1909; Assistant in Surgery, University of California, 1910-12; Surgeon to Reserve Hospitale Ettlingen and Reserve Hospital III, IV, V, Karlsruhe, 1915-16. At Stanford since 1913.

[Ely, Leonard Wheeler,
Associate Professor of Surgery (Orthopedics), In Gov't Service]

A. B., Columbia, 1889; M. D., College of Physicians and Surgeons, Columbia University, 1895. At Stanford since 1913.

†Emge, Ludwig Augustus, SF, Park 6964
Instructor in Obstetrics and Gynecology,
36 Farnsworth Lane, SF-sf

B. S., Chicago, 1912; M. D., Rush Medical College, 1914. Assistant in Anatomy, University of Chicago, 1912-13; Special Worker in Pathology, Rush Medical College, 1913-14; Interne, Memorial Institute for Infectious Diseases and Presbyterian Hospital, 1914-15; Resident and Assistant in Gynecology and Obstetrics, University of California Hospital, 1915-17. At Stanford since 1917.

†Espinosa, Aurelio Macedonio, PA 998
Associate Professor of Romanic Languages, 543 Middlefield

A. B., Colorado, 1902, A. M., 1904; Ph. D., Chicago, 1909. Assistant in Romance Languages, University of Colorado, 1901-02, Instructor, Summer Terms, 1904, 1905; Professor of Romance Languages, University of New Mexico, 1902-10; Fellow in Romance Languages and Instructor in Spanish, University of Chicago, 1908-09; Lecturer in Spanish Literature, Summer Sessions, University of Chicago, 1914, University of California, 1912, 1915; Associate Editor, *Revue de Dialectologie Romane* and of *Journal of American Folk Lore*, since 1914; Editor, *Hispania*, since 1917; Member of Advisory Editorial Board of *Inter-America*, since 1917. At Stanford since 1910.

†Evans, George Fullerton, PA 417M
Instructor in English, 203 Addison-p

A. B., Harvard, 1905, A. M., and S. T. B., 1909. At Stanford since 1916.

†Faber, Harold Kniest, SF, Franklin 4858
Assistant Professor of Medicine (Pediatrics),
1875 California, SF-sf

A. B., Harvard, 1906; M. D., Michigan, 1911. Medical Interne, New York Hospital, 1911-13; Resident Pathologist, Babies' Hospital, New York, 1913-14; Fellow, Rockefeller Institute, New York, 1914-15. At Stanford since 1915.

†Fairclough, Henry Rushton, PA 1028W
Professor of Latin, 6 Cabrillo

A. B., Toronto, 1883, A. M., 1886; Ph. D., Johns Hopkins, 1896. Fellow in Classics, University College, Toronto, 1883-84; Classical and English Master, Brockville High School, 1884-86; Graduate Scholar, Johns Hopkins University, 1886-87, Fellow, 1887; Lecturer in Greek and Ancient History, University College, Toronto, 1887-93; Professor of Latin, University of Wisconsin, Summer Session, 1906, Columbia University, Summer Session, 1908, University of Chicago, Summer Quarter, 1910; Professor of Latin, American School of Classical Studies, Rome, 1910-11. At Stanford since 1893.

†Fish, John Charles Lounsbury, PA 308
Professor of Railroad Engineering, 1101 Emerson-p

C. E., Cornell, 1892. Instructor in Civil Engineering, Cornell University, 1892-93; Division Engineer, Lake Shore and Michigan Southern Railway, 1906-08. At Stanford since 1893.

Fisher, Walter Kenrick,
Assistant Professor of Zoology, 1525 Waverley-p

A. B., Stanford, 1901, A. M., 1903, Ph. D., 1906. Assistant, U. S. Biological Survey, 1897-1901, 1903; Assistant, U. S. Fish Commission, 1902. At Stanford since 1902.

†Folsom, David Morrill, PA 429
Professor of Mining, 320 Embarcadero-p

A. B., Stanford, 1902, Engineer, 1904. Student Columbia School of Mines, 1902-03; Engineer with Boston and Montana Consolidated Copper and Silver Mining Co., 1904-09. At Stanford since 1910.

†Foss, John Harrison, PA 757M
Assistant Professor of Civil Engineering, 327 Emerson-p

A. B., Stanford, 1903. Assistant Engineer, Hamakua Ditch, Huelo, Maui (Hawaiian Islands), 1903-04, Engineer, 1904-05; Engineer, Maui Agricultural Co., Paia, Maui, 1905-07; Engineer Honolua Ditch, Honokohau, Maui, 1912-13. At Stanford since 1907.

†Foster, Benjamin Oliver, PA 767W
Associate Professor of Latin, 1445 Tasso-p

A. B., Stanford, 1895; A. M., Harvard, 1897, Ph. D., 1899. Parker Fellow of Harvard University, studying in the American School of Classical Studies in Rome, 1899-1900; Acting Professor of Latin and Greek, State Normal College of Michigan, 1900-01; Instructor, University of California, Summer Session, 1908. At Stanford since 1901.

†Franklin, Edward Curtis, PA 216
Professor of Organic Chemistry, and Dean of Graduate Study, Mirada ave.

B. S., Kansas, 1888, M. S., 1890; Ph. D., Johns Hopkins, 1894. Chemist to the Palo Alto Plantation and Sugar Factory, Donaldsonville (La.), 1888; Chemist to the Bella Vista Mining and Milling Co., Los Quemados, Costa Rica,

1897; Instructor in Chemistry, University of Kansas, 1888-90; Student, University of Berlin, 1890-91; Assistant in Chemistry, University of Kansas, 1891-93, Associate Professor, 1894-99, Professor of Physical Chemistry, 1899-1903; Member of the U. S. Assay Commission, 1907; Chief of the Division of Chemistry, U. S. Public Health Service, Washington, D. C., 1911-13. At Stanford since 1903.

FURMAN, NATHANIEL HOWELL, PA 1042W
Instructor in Chemistry, 9 Alvarado

B. S., Princeton, 1913, A. M., 1915, Ph.D., 1918. Assistant in Chemistry, Princeton University, 1913-16; Junior Chemist, Government Service, 1916; C. E. Procter Fellow in Chemistry, Princeton Universtiy, 1916-17. At Stanford since 1917.

†GARDNER, DAVID CHARLES, PA 1068
Chaplain, 1a Alvarado

Graduate Church Divinity School of the Pacific, 1897. Curate, St. James Mission, San Francisco, 1898; Rector of All Saints Church, Palo Alto, 1898-1902. At Stanford since 1902.

[†GARFIAS, VALENTINE RICHARD,
Assistant Professor of Geology and Mining, in Cuba]

A. B., Stanford, 1907, A. M., 1912, Engineer, 1917. Maintenance of Way Department, Southern Pacific Company, 1907-08; Assistant in Civil Engineering, Leland Stanford Junior University, 1910; Geologist and Petroleum Engineer with Ralph Arnold, 1910-15; Consulting Petroleum Engineer, U. S. Bureau of Mines, since 1915; Engineer, Montebello Oil Co., 1915. At Stanford since 1915.

†GARVER, FREDERIC BENJAMIN,
Assistant Professor of Economics, 26 Alvarado

A. B., Nebraska, 1909. Graduate Student, University of Wisconsin, 1909-10; Special Agent, Wisconsin Tax Commission, 1910; Fellow in Political Economy, University of Chicago, 1910-11, Assistant, 1911-12; Graduate Student, Harvard University, 1912-13; Instructor in Political Economy, University of Chicago, 1912-14. At Stanford since 1914.

VON GELDERN, CHARLES ERNEST, PA 1255J
Medical Adviser of Men Students, Kingscote Apts.

A. B., 1913, M. D., 1913. Junior Interne, Lane Hospital, 1914, Senior Surgical Interne, 1915; Instructor in Anatomy, Tulane University, 1916, Assistant Professor, 1917.

†GIBBONS, HENRY WALTER, SF, Fillmore 3740
Assistant Clinical Professor of Obstetrics and Gynecology, 3491 Pacific SF-sf

B. S., University of California, 1899; M. D., Cooper Medical College, 1902. Instructor in Pathology, Cooper Medical College, 1905-07; Instructor in Gynecology, 1907-11. At Stanford since 1912.

GILBERT, CHARLES HENRY, PA 865
Professor of Zoology, 446 Forest

B. S., Butler University, 1879; M. S., Indiana, 1882, Ph. D., 1883. Assistant in Natural Sciences and Modern Languages, Indiana University, 1880-84; Professor of Natural History, University of Cincinnati, 1884-89; Professor of Zoology, Indiana University, 1889-91; Assistant to the U. S. Bureau of Fisheries, since 1880; Assistant, in charge of scientific explorations of the U. S. S. "Albatross," 1889, 1890, 1902, 1904, 1906; in charge salmon investigations for British Columbia since 1912. At Stanford since 1891.

[23]†GILMAN, PHILIP KINGSNORTH, SF, Fillmore 4274
Assistant Clinical Professor of Surgery, 2010 Vallejo, SF-sf

A. B., Stanford, 1901; M. D., Johns Hopkins, 1905. Assistant Resident Sur-

geon, Johns Hopkins Hospital, 1905-07; Assistant Professor of Pathology, Philippine Medical School, 1907-08; Assistant Professor of Surgery, College of Medicine and Surgery, University of the Philippines, 1908-12, Professor of Surgery and Chief of Department, 1912-16; Chief Surgeon, Philippine General Hospital, 1912-16. At Stanford since 1916.

[†Girard, Frank Robert, SF, Fillmore 4566
Assistant Clinical Professor of Obstetrics and Gynecology,
In Government Service]

M. D., California, 1903. Volunteer Assistant Koenigliches Krankenhaus, Berlin, Germany, 1905-06; House Pathologist and House Surgeon, St. Luke's Hospital, New York, 1906-08; Assistant Resident Physician, Sloane Maternity Hospital, New York, 1908-09. At Stanford since 1914.

Graham, Harrington Bidwell, Berkeley 1215
Assistant Clinical Professor of Surgery (Otology),
2419 Channing, Berkeley-b

B. S., California, 1896, M. D., 1899. Superintendent of Waldeck Sanitarium, 1899; Assistant in Surgery, San Francisco Polyclinic, 1904; Assistant, Ear, Nose, and Throat Clinic, Cooper Medical College, 1910-11. At Stanford since 1912.

[1]†Gray, Henry David, PA 1042R
Associate Professor of English, 22 Alvarado

Ph. B., Colgate, 1897; A. M., Columbia, 1898, Ph. D., 1904. Assistant in German and French, Colgate Academy, 1896-97; University Scholar, Columbia University, 1898-1900; Instructor in Dramatic Literature, American Academy of Dramatic Arts, 1900-02; Instructor in English, University of Texas, 1902-05; Lecturer in English, Columbia University, Summer Session, 1905, University of Oregon, Summer Session, 1910, University of Illinois, Summer Session, 1912. At Stanford since 1905.

†Green, Rufus Lot, PA 1127J
Professor of Mathematics, 13 Salvatierra

B. S., Indiana, 1885, A. M., 1889. Instructor in Mathematics, Indiana University, 1885-86, Assistant Professor, 1886-88, Associate Professor, 1889-91, Professor of Pure Mathematics, 1891-93; Student, Johns Hopkins University, 1886-87. At Stanford since 1893.

†Grojean, Gabriel Henri,
Instructor in French, 1212 Byron

B. A. and B. S., University of Lille (France), 1892-93; J. D., University of Toulouse, 1898, Licencié-ès-Lettres, 1900. Lecturer in Germany. Student of University of Königsberg and in Italy; Teacher of Modern Languages in French high schools, 1911; Instructor in Romanic Languages, University of Pennsylvania, 1913. At Stanford since 1914.

Hadden, Elizabeth, PA 455J
Chief of Order Department, Library, 1157 Ramona-p

At Stanford since 1901.

†Hall, Howard Judson, PA 517W
Assistant Professor of English, 1015 Forest Court-p

B. S., Michigan State Agricultural College, 1890; A. B., Stanford, 1896; A. M., Harvard, 1900. Professor of English and Librarian, University of Arizona, 1891-1904. At Stanford since 1904.

[1]†Harcourt, Robert Henry, PA 525W
Instructor in Forge Practice, 559 Everett-p

Blacksmith with Risdon Iron Works, San Francisco, 1898-1901, 1903-04; with Hammond Car and Elevator Company, San Francisco, 1901-02, 1904-05; with National Iron Works, San Francisco, 1902-03; with Abner Doble Steel Com-

pany, San Francisco, 1905-06, Foreman of Forge Shop, 1906-07. At Stanford since 1907.

HAYS, ALICE NEWMAN, PA 1052J
Reference Librarian, 3 Alvarado

A. B., Stanford, 1896; B. L. S., New York State Library School, 1903; Assistant Home Education Department, New York State Library, 1901. At Stanford since 1901.

†HEATH, HAROLD, PA 434J
Professor of Zoology, 1147 Ramona-p

A. B., Ohio Wesleyan, 1893; Ph. D., Pennsylvania, 1898. Assistant in Biology, Ohio Wesleyan University, 1891-93; Professor of Biology, University of the Pacific, 1893-94; Harrison Fellow in Zoology, University of Pennsylvania, 1896-98. At Stanford since 1894.

†HEMPL, GEORGE, PA 617
Professor of Germanic Philology, 355 Kellogg-p

A. B., Michigan, 1879; Ph. D., Jena, 1889; LL. D., Wisconsin, 1904. Principal Saginaw (Mich.), H. S., 1879-82, La Porte (Ind.), H. S., 1882-84; Instructor in German, Johns Hopkins University, 1884-86; Student, Universities of Göttingen, Tübingen, Strassburg, Jena, and Berlin, 1886-89; Assistant Professor of English, University of Michigan, 1889-93, Junior Professor, 1893-97, Professor of English Philology and General Linguistics, 1897-1906; Professor of English, University of Chicago, Summer Quarter, 1897; President of the American Dialect Society, 1900-05; President of the Modern Language Association, 1902-03; President of the American Philological Association, 1903-04. At Stanford since 1906.

†HENLINE, HENRY HARRISON,
Instructor in Electrical Engineering, 306 S. Third, San Jose-sj

B. S., Illinois, 1914. Instructor in Science and Mathematics, Otaka (Okla.) H. S., 1914-15; Graduate, Chicago Central Station Institute, 1916; with Commonwealth Edison Co., 1916-17. At Stanford since 1917.

[23]†HEWLETT, ALBION WALTER, SF Franklin 1914
Professor of Medicine, In Government Service

B. S., University of California, 1895; M. D., Johns Hopkins, 1900. Assistant Professor of Theory and Practice of Medicine, Cooper Medical College, 1906-08; Professor of Internal Medicine, University of Michigan, 1908-16. At Stanford since 1916.

[†HILL, FRANK ERNEST,
Instructor in English, New York, N. Y.]

A. B., Stanford, 1911, A. M., 1914. Assistant in English, University of Illinois, 1912-13. At Stanford since 1913.

HILL, HAROLD PHILLIPS, SF, West 967
Associate Clinical Professor of Medicine, 2336 Steiner, SF-sf

A. B., Stanford, 1898; M. D., University of California, 1901. Assistant in Physiology, Department of Medicine, University of California, 1889-1901, Instructor, 1901-03; Assistant Visiting Physician, St. Luke's Hospital, 1903-06, Visiting Physician, since 1906. At Stanford since 1912.

†HILL, HENRIE GRANVILLE, San Jose 2265L
Lecturer in Law, 715 W. Julian, San Jose-sj

A. B., Stanford, 1909, J. D., 1911.

†HOFFMAN, URAL NATHANIEL, PA 1039W
Instructor in English, Kingscote Apts.

A. B., Trinity College (Durham, N. C.), 1907. At Stanford since 1916.

†Hoisholt, Andrew William, Napa 294
Clinical Professor of Medcine (Psychiatry),
State Hospital, Napa-n

M. D., Cooper Medical College, 1882; M. D., University of Heidelberg, 1884. Adjunct to chair of Physiology, Cooper Medical College, 1891-95; Assistant Physician, State Hospital, Stockton, 1889-1913; Superintendent Napa State Hospital, since 1913. At Stanford since 1912.

§Holsclaw, Florence Mabel, SF, Prospect 3700
Assistant Clinical Professor of Medicine, 1373 Clay, SF-sf
(Pediatrics),

A. B., Stanford, 1894; M. D., Cooper Medical College, 1897. Assistant in Pediatrics, Cooper Medical College, 1900-11. At Stanford since 1912.

†Hoskins, Leander Miller, PA 75
Professor of Applied Mathematics, 365 Lincoln-p

B. C. E. and B. S., Wisconsin, 1883, M. S., 1885, C. E., 1887. Instructor in Engineering, University of Wisconsin, 1885-89, Assistant Professor of Mechanics, 1889-91, Professor of Theoretical and Applied Mechanics, 1891-92. At Stanford since 1892.

†Hulme, Edward Maslin,
Acting Professor of European History (winter quarter),
337 Encina Hall

A. B., Stanford, 1897; A. M., Cornell, 1902. Instructor in History and English, Portland (Or.) H. S., 1897-1900; University Scholar, Harvard University, 1900-01; Cornell Traveling Scholar, The Sorbonne, Paris, 1902; Lecturer in History, University of Idaho, 1902-05, Associate Professor, 1905-06, Professor, since 1906.

[23]†Huston, Charles Andrews,
Professor of Law, and Dean of the Law School, In Gov't Service

A. B., Chicago, 1902, J. D., 1907; S. J. D., Harvard, 1913. Fellow in Political Economy, University of Chicago, 1902-03; Assistant in Rhetoric, 1903-04; Associate in Rhetoric, 1904-06; Professor of Law, University of Chicago, Summer Quarter, 1914, Columbia University, Summer, 1916. At Stanford since 1906.

Ichihashi, Yamato, PA 932
Assistant Professor of Japanese History and Government,
1010 Emerson-p

A. B., Stanford, 1907, A. M., 1908; Ph. D., Harvard, 1914. Assistant in Economics, Leland Stanford Junior University, 1908-10; Special Agent for U. S. Immigration Commission, 1908-10; Graduate Student, Harvard University, 1910-12, Henry Bromfield Roger Memorial Fellow in Sociology, 1911-12. At Stanford since 1913.

[23]†Inman, Thomas George, SF, Pacific 7036
Clinical Instructor in Medicine (Neurology), In Gov't Service

Ph. G., California College of Pharmacy, 1892; M. D., Cooper Medical College, 1894. Assistant Demonstrator of Anatomy, Cooper Medical College, 1895-1900, Instructor in Applied Anatomy, 1900-11; Assistant Surgeon, St. Luke's Hospital, San Francisco, 1906-13, Visiting Neurologist, since 1915.

[†Johnson, Alvin Saunders,
Professor of Political Science, New York, N. Y.]

A. B., Nebraska, 1897, A. M., 1898; Ph. D., Columbia, 1902. Reader in Economics, Bryn Mawr College, 1901-02; Tutor, Instructor, and Adjunct Professor of Economics, Columbia University, 1902-06; Professor of Economics,

§Resigned December, 1917.

University of Nebraska, 1906-08; Professor of Economics, University of Texas, 1908-10; Acting Associate Professor of Economics, University of Chicago, Summer and Fall Quarters, 1909, Associate Professor 1910-11; Professor of Economics, Cornell University, 1912-16. At Stanford 1911-12 and since 1916.

JOHNSON, EDITH EUGENIE, PA 263
Acting Medical Adviser of Women (beginning December, 1917), 375 Hawthorne-p

M. D., Cornell, 1907.

†JOHNSTON, OLIVER MARTIN, PA 1040R
Professor of Romanic Languages, 4 Alvarado

A. B., Mississippi College, 1890, A. M., 1892; Ph. D., Johns Hopkins, 1896. Principal, Preparatory Department, Mississippi College, 1890-91, Professor of English, 1891-93; Fellow in Johns Hopkins University, 1895-96; Lecturer in French Philology, Bryn Mawr College, 1896-97. At Stanford since 1897.

†JONES, ELIOT,
Associate Professor of Economics, 23 Kingscote Apts.

A. B., Vanderbilt, 1906; A. M., Harvard, 1908, Ph. D., 1913. Instructor in Economics, Harvard University, 1912-13, University of Pennsylvania, 1913-14; Associate Professor of Economics, Iowa State University, 1914-16; Professor of Economics, University of Texas, 1916-17; Examiner, Federal Trade Commission, 1917. At Stanford since 1917.

KELLER, LENA MARGUERITE, PA 417J
Reviser, Catalogue Department, Library, 233 Addison-p

A. B., Cornell, 1903. Student, New York State Library School, 1905; with Library of Congress, 1906-12. At Stanford since 1912.

[2]†KELLOGG, VERNON LYMAN, PA 1141
Professor of Entomology, 14 Cabrillo

B. S., Kansas, 1889, M. S., 1892. Student, Cornell University, 1891, University of Leipzig, 1893; Assistant Professor of Entomology, University of Kansas, 1890-93, Associate Professor, 1893-94. At Stanford since 1894.

†KELLOGG, WILFRED HARVEY,
Lecturer in Hygiene and Public Health, Berkeley-b

Ph. G., California, 1892, M. D., 1896. Bacteriologist, San Francisco Health Department, 1900-03; State Bacteriologist, California, 1908; Acting Assistant Surgeon, U. S. Public Health Service, detailed for plague investigations in Venezuela, 1909-11; Director of Laboratories, Department of Public Health, San Francisco, since 1912. At Stanford since 1914.

†KENNEDY, ARTHUR GARFIELD, PA 474R
Instructor in English Philology, 1527 Waverley-p

A. B., Doane College, 1902; A. M., Nebraska, 1905; Ph. D., Stanford, 1914. At Stanford since 1914.

†KIRKWOOD, MARION RICE, PA 436M
Associate Professor of Law, 1325 Bryant-p

A. B., Stanford, 1909, J. D., 1911. Student, Harvard Law School, 1909-10; Assistant Professor of Law, University of Oklahoma, 1911-12. At Stanford since 1912.

KNAPP, EDWARD V., SF, Mission 8600
Clinical Instructor in Medicine (beginning winter quarter), St. Luke's Hospital, SF-sf

M. D., Cooper Medical College, 1907. Interne, City and County Hospital, San Francisco, 1907-08; Contract Surgeon, U. S. A., 1909-10; Instructor in Pathology, San Francisco Veterinary College, 1914-16; Resident Pathologist, St.

Luke's Hospital, since 1911; Pathologist, Diagnostic Section, St. Luke's Hospital, 1915. At Stanford since 1918.

KNOCH, CHARLOTTE A., PA 1040M
Assistant Professor of German, 7 Salvatierra

A. B., Stanford, 1897. Student, University of Göttingen, 1894, University of Berlin, 1913-14; Teacher in Los Angeles Schools, 1890-93; in charge of Modern Languages, Pasadena High School, 1898-1902, Vice-Principal and Head of Modern Languages, 1902-11, of Modern and Ancient Languages, 1911-13. At Stanford since 1914.

KNOLLIN, ERNESTO RAY, PA 1159
Instructor in Physical Training, Encina Hall

A. B., Stanford, 1914. At Stanford since 1914.

†KOHS, SAMUEL C.,
Buckel Fellow in Education, 751 Webster

B. S., College of the City of New York, 1912, Fellow in Psychology, with Dr. H. H. Goddard, Vineland (N. J.) Training School for the Feeble Minded, 1912-13; Fellow in Psychology and Director of Clinic for Exceptional Children, Clark University, 1913-14; Psychologist, House of Correction, Chicago, 1914-16.

†KREHBIEL, EDWARD, PA 1129
Professor of History, 29 Salvatierra

A. B., Kansas, 1902; Ph. D., Chicago, 1906. Graduate Student, University of Chicago, 1902-06, Fellow, 1903-05, Assistant, 1904-06; Graduate Student, Harvard University, 1904; Student, École de Chartes, Paris, 1905; Instructor, University of Chicago High School, 1905-06; Assistant in History, University of Chicago, 1906-07, Instructor, 1907-09. At Stanford since 1909.

[†LANGNECKER, HARRY LESLIE, PA 854
Clinical Instructor in Surgery (Orthopedic), In Gov't Service]

A. B., Stanford, 1901; M. D., Johns Hopkins, 1906. Orthopedic House Officer, Massachusetts General Hospital, 1908, Assistant to Orthopedic Surgeon, 1909. At Stanford since 1915.

[†LARREMORE, THOMAS ARMITAGE,
Instructor in Law, In Government Service]

A. B., Yale, 1911; LL. B., Columbia, 1916. At Stanford since 1916.

†LEIB, KARL ELIAS,
Instructor in English, 160 Webster

A. B., Stanford, 1916. At Stanford since 1916.

†LEMOS, PEDRO J.,
Curator of the Museum, 460 Churchill-p

Assistant Professor of Etching and Lettering, University of California, 1910-11, Professor of Design and Applied Arts, 1911-12; Director of San Francisco Institute of Art, 1912-17; Exhibitor, Pennsylvania Academy of Fine Arts, Carnegie Institute, Pittsburg, Brooklyn Museum of Fine Arts, Chicago Art Institute, New York Galleries, Panama-Pacific International Exposition. At Stanford since 1917.

†LENOX, LIONEL REMOND, Mt. View 47
Professor of Analytical Chemistry, Mountain View

Ph. B., Columbia, 1888. Assistant Chemist, Bethlehem Steel Co., 1887; Instructor in Chemistry, Lehigh University, 1888-91; Chemist, Ordnance Department, U. S. N., Washington (D. C.), 1891-92; Chief Chemist, Conkling Iron Co., 1888-92; Chemist, Allan Cement Co., 1890-91. At Stanford since 1892.

†Lesley, Everett Parker, PA 253
Associate Professor of Mechanical Engineering, 12 Alvarado

A. B., Stanford, 1897; M. M. E., Cornell, 1905. Apprentice and Foreman in Union Iron Works, San Francisco, 1897-1903; Assistant Inspector to Naval Constructor, 1903-04; Draftsman at U. S. Experimental Model Basin, Washington (D. C.), 1905-07. At Stanford since 1907.

†Liggett, James Bennett, PA 533R
Instructor in Foundry Practice, 445 Forest-p

Apprentice and Foundry Moulder, Falls Rivet and Machine Co., Cuyahoga Falls (Ohio), 1883-88, Webster, Camp & Lane, Akron (Ohio), 1888-93, Bowler & Co., Cleveland (Ohio), 1893-98; Cleveland Steel Casting Co., 1898-99; Foreman, Born Steel Range Co., Cleveland (Ohio), 1899-1902, Westinghouse Electric Co., Cleveland (Ohio), 1902. At Stanford since 1902.

Lothrop, Margaret Mulford, PA 1028W
Instructor in Economics, 6 Cabrillo

A. B., Smith, 1905; A. M., Stanford, 1915. At Stanford since 1915.

†Lyman, George Dunlap, SF, Fillmore 3456
Assistant Clinical Professor of Medicine (Obstetrics and Gynecology), 3647 Washington, SF-sf

A. B., Stanford, 1905; M. D., Columbia, 1909. House Physician, Bellevue Hospital, New York, 1909-11. At Stanford since 1912.

†MacArthur, Charles George, Berkeley 7049
Instructor in Pharmacology, 1525 Scenic, Berkeley-b

A. B., Oberlin, 1908; A. M., Chicago, 1908. At Stanford since 1916.

McCracken, Mary Isabel, PA 1127W
Assistant Professor of Entomology, 1 Arguello

A. B., Stanford, 1904. A. M., 1905, Ph. D., 1908. At Stanford since 1904.

†McDowell, John Ezra, PA 1044
Assistant Registrar and Alumni Secretary, 10 Cabrillo

A.B., Stanford, 1900. At Stanford since 1900.

†McFarland, Frank Mace, PA 480
Professor of Histology, 2 Cabrillo

Ph. B., De Pauw, 1889; A. M., Stanford, 1893; Ph. D., Würzburg, 1896. Professor of Biology and Geology, Olivet College, 1889-92; Student, Würzburg, Zürich, and Naples, 1894-96. At Stanford since 1892.

†McKee, Albert Brown, Redwood 1712F14
Clinical Professor of Surgery (Ophthalmology), Redwood City-r

Ph. B., University of the Pacific, 1883, Ph. M., 1886; M. D., Cooper Medical College, 1886. Instructor and Acting Head of the Eye, Ear, Nose, and Throat Division, University of California Medical Department, 1902-08; Associate Professor of Ophthalmology, Cooper Medical College, 1908-12. At Stanford since 1912.

†McMurphy, James Ira Wilson,
Instructor in Botany, College Terrace

A. B., Stanford, 1908, A. M., 1909. At Stanford since 1908.

†McNaught, Harvard Young, SF, Pacific 8561
Assistant Clinical Professor of Surgery (Otology), 144 27th Avenue, SF-sf

M. D. C. M., Trinity University, 1897. Fellow by Examination, Trinity Medical

College, 1897; Assistant, Ear, Nose, and Throat Clinic, Cooper Medical College, 1911-12. At Stanford since 1913.

†MALONEY, HENRY WILFRED, PA 696
Instructor in Military Science and Physical Training, 176 Waverley-p

†MANNING, WILLIAM ALBERT, PA 689R
Associate Professor of Applied Mathematics, 604 Tennyson-p

A. B., Willamette University, 1900; A. M., Stanford, 1902, Ph. D., 1904. Student, University of Paris, 1904-05; Acting Assistant Professor of Mathematics, University of Illinois, 1909-10. At Stanford since 1900.

†MANWARING, WILFRED HAMILTON, PA 665
Professor of Bacteriology and Experimental Pathology, 1106 Bryant-p

B. S., Michigan, 1895; M. D., Johns Hopkins, 1904. Instructor in Physiology, State Normal School, Winona, Minn., 1898-1901; Fellow and Assistant in Pathology, University of Chicago, 1904-05, and Summer Quarter, 1906; Associate Professor of Pathology and Bacteriology, Indiana University, 1905-07; Traveling Fellow in Pathology and Bacteriology, Rockefeller Institute, 1907-08, Assistant, 1910-13; Research worker, Emil Fischer's Laboratory and v. Wassermann's Laboratory, Berlin, 1907-08, Pathological Institute, Leipzig, and Ehrlich's Laboratory, Frankfort-on-Main, 1908-09, Physiological Institute, London, and Lister Institute of Preventive Medicine, London, 1909-10. At Stanford since 1913.

[1]†MARTIN, ERNEST GALE,
Professor of Physiology, 807 Waverley

Ph. B., Hamline, 1897; Ph. D., Johns Hopkins, 1904. Assistant in Biology, Hamline University, 1896-97; Fellow in Physiology, Johns Hopkins University, 1902-03, Assistant, 1903-04; Instructor in Anatomy and Physiology, Purdue University, 1904-06; Instructor in Physiology, Harvard University, 1906-10, Assistant Professor, 1910-16; Instructor in Physiology, Simmons College, 1907-08; Lecturer in Physiology, Sargent School for Physical Education, 1906-14; Assistant Professor of Physiology, Radcliffe College, 1914-16. At Stanford since 1916.

[12]†MARTIN, ERNEST WHITNEY, PA 132
Associate Professor of Greek, In Government Service

A. B., Chicago, 1900; A. M., Stanford, 1902, Ph. D., 1910. Instructor in Latin and Greek, Private School, Clarinda (Ia.), 1895-96, Principal of High School, 1896-98; Student, University of Berlin, and American School of Classical Studies, Rome, 1900-01; Acting Professor of Latin and Greek, University of Nevada, 1908-09, Professor of Greek, 1909-10. At Stanford since 1901.

[23]†MARTIN, PERCY ALVIN,
Assistant Professor of European History, 380 Kingsley-p

A. B., Stanford, 1902, A. M., 1903; A. M., Harvard, 1907, Ph. D., 1912. Student, University of Paris, 1903-04, Universities of Berlin and Leipzig, 1907-08; Fellow, Harvard University, 1908; Professor of History and French, Whittier College, 1904-05; Lecturer in Latin-American History, Harvard University, 1915; Lecturer in South American History and Institutions, University of Washington, Summer Session, 1916. At Stanford since 1908.

†MARX, CHARLES DAVID, PA 255
Professor of Civil Engineering, 357 Kingsley

B. C. E., Cornell, 1878; C. E., Karlsruhe Polytechnicum, 1881. Instructor in Civil Engineering, Karlsruhe Polytechnicum, 1880-81; U. S. Assistant Engineer, Missouri River Improvement, 1882-84; Assistant Professor of Civil Engineering, Cornell University, 1884-90; Professor of Civil Engineering, University of Wisconsin, 1890-91. At Stanford since 1891.

†Marx, Guido Hugo, PA 715
Professor of Machine Design, 356 Lincoln

M. E., Cornell, 1893. With Gleason Tool Co., Rochester (N. Y.), 1893-94; with Bement, Miles & Co., Philadelphia, 1894-95. At Stanford since 1895.

Mehrtens, Henry George, Fillmore 879
Clinical Instructor in Medicine (Neurology),
2407 Pacific, SF-sf

B. S., California, 1911; M. D., Stanford, 1913. At Stanford since 1915.

[†Meyer, Arthur William,
Professor of Anatomy, Baltimore, Md.]

B. S., Wisconsin, 1898; M. D., Johns Hopkins, 1905; Assistant and Instructor in Anatomy, Johns Hopkins University, 1905-07; Assistant Professor of Anatomy, University of Minnesota, 1907-08; Professor of Anatomy, Northwestern University, 1908-09. At Stanford since 1909.

Michelson, Lewis, Prospect 2908
Instructor in Surgery (Genito-Urinary), 1562 Vallejo, SF-sf

M. D., Cooper Medical College, 1907. Interne, Alameda County Hospital, 1907-08; Student, Vienna, 1910-11; Special Worker, Brady Urological Institute, Johns Hopkins University, 1916-17. At Stanford since 1917.

Miller, Wayne Leslie, PA 1245R
Student Adviser, 580 Addison

Mirrielees, Edith Ronald, PA 417R
Instructor in English, 1027 Emerson

A. B., Stanford, 1907. At Stanford since 1909.

†Mitchell, John Pearce, PA 722
Associate Professor of Chemistry, 235 Embarcadero

A. B., Stanford, 1903, A. M., 1904, Ph. D., 1909. Student, University of Leipzig, 1904-05. At Stanford 1903-04 and since 1905.

†Moore, Chester Biven, SF, Fillmore 922
Clinical Instructor in Obstetrics and Gynecology,
2327 Divisadero, SF-sf

B. S., California, 1906, M. D., 1910. Interne, University of California Hospital, 1909-11; House Officer, Children's Hospital, Boston, 1911-12. At Stanford since 1913.

†Moreno, Halcott Cadwalader, PA 526J
Associate Professor of Applied Mathematics, 28 Alvarado

A. B., University of Georgia, 1893, A. M., 1894, B. L., 1896; Ph. D., Clark, 1900. Tutor in Mathematics, University of Georgia, 1893-97; Scholar and Fellow in Mathematics, Clark University, 1897-1900, Assistant in Mathematics, Clark University, 1900-01. At Stanford since 1901.

†Moser, Charles, PA 592J
Assistant Professor of Civil Engineering, 651 Homer-p

C. E., Ohio Northern University, 1902; A. B., Stanford, 1908. At Stanford since 1908.

[23]Mosher, Clelia Duel, PA 23
Assistant Professor of Personal Hygiene and Medical
Adviser of Women, In Government Service

A. B., Stanford, 1893, A. M., 1894; M. D., Johns Hopkins, 1900. Assistant in Hygiene and Physical Training, Leland Stanford Junior University, 1893-94,

Instructor, 1894-96; Externe in the Johns Hopkins Hospital Dispensary, and Gynecological Assistant in Dr. Howard A. Kelly's Sanatorium, Baltimore (Md.), 1900-01; Physician, Palo Alto, 1901-10. At Stanford 1893-96 and since 1910.

[†Mulock, Fred S.,
Instructor in Electrical Engineering, In Government Service]

A. B., Stanford, 1915. At Stanford since 1915.

†Murray, Augustus Taber, PA 481M
Professor of Greek, 1019 Bryant

A. B., Haverford, 1885; Ph. D., Johns Hopkins, 1890. Fellow in Johns Hopkins University, 1887-88; Professor of Greek, Earlham College, 1888-90; Student, Universities of Leipzig and Berlin, 1890-91; Professor of Greek, Colorado College, 1891-92. At Stanford since 1892.

[2]†Niebel, Herbert Lee, PA 181
Instructor in Bacteriology, 1106 Bryant-p

A. B., Stanford, 1914. At Stanford since 1917.

Oertly, Ernest, PA 1042W
Instructor in Organic Chemistry (beginning winter quarter), 9 Alvarado

B. S., University of Geneva (Switzerland), 1909, D. S., 1911. Diploma at Technical School, Winterthur, Switzerland, 1907; Chemist to Arnold Print Works, North Adams, Mass., 1912-13; Assistant Manager and Chemist Colorist to Friedrich Oertly, Cotton Print Works, Naefels, Switzerland, 1914-16; Research Chemist, Organic Laboratory, Sherwin-Williams Co., Chicago, 1917. At Stanford since 1918.

[Oliver, Harry Reeves, SF, Fillmore 1720
Assistant Clinical Professor of Medicine (Serology),
In Government Service]

M. D., Cooper Medical College, 1898. Assistant in Pathology, Cooper Medical College, 1898-1904, Instructor, 1904-06, Assistant Professor, 1906-11, Associate Professor of Clinical Pathology, 1911-12, Serologist, 1912. At Stanford since 1909.

†O'Neill, Arthur Aloysius, SF, Garfield 1722
Clinical Instructor in Medicine, 618 Bush, SF-sf

M. D., Cooper Medical College, 1891. Assistant Surgeon, Cooper Medical College Clinic, 1893; Assistant in Diseases of the Skin, San Francisco Polyclinic, since 1902; in charge of Isolation and Plague Hospital, 1907-10, of Isolation Hospital, 1912. At Stanford since 1913.

Ophüls, Louise, SF, West 2892
Medical Librarian, Lane Medical Library,
2186 California, SF-sf

At Stanford since 1910.

†Ophüls, William, SF, Fillmore 1680
Dean of the Medical School, and Professor of Pathology,
114 Walnut, SF-sf

M. D., University of Göttingen, 1895. Assistant at the Pathologic Institute at Göttingen, 1896-97; Professor of Pathology and Bacteriology, University of Missouri, 1897-98; Professor of Pathology and Bacteriology, Cooper Medical College, 1898-1912; Pathologist, Lane Hospital, since 1898. At Stanford since 1909.

†Palmateer, Theron J.,
Instructor in Machine Shop Practice, 171 E. Oxford, Mayfield-m

Apprentice with Sibley & Ware, South Bend (Ind.); Journeyman Machinist,

1896-1905, with R. Hoe & Co., New York, Columbus Machine Works, Columbus, O., Elems Engineering Works, Chicago, Western Gas Engine Works, Mishawaka, Ind., Webster Iron Works, Bakersfield, Cal., R. S. Hunkins, San Jose, Cal. At Stanford since 1904.

PALMER, CAROLINE B., SF, West 6523
Clinical Instructor in Surgery (Anesthetics), 2018 Webster, SF-sf

M. D., Cooper Medical College, 1906. Chief Anesthetist, Lane Hospital since 1909. At Stanford since 1917.

†PARK, CHARLES V., PA 569
Assistant Librarian, 660 Tennyson

A. B., Stanford, 1909; Certificate, New York Public Library, Library School, 1915. At Stanford since 1909.

†PEIRCE, GEORGE JAMES, PA 1226J
Professor of Botany and Plant Physiology, 281 Embarcadero

S. B., Harvard, 1890; A. M. and Ph. D., Leipzig, 1894. Assistant in Botany, Harvard University and Radcliffe College, 1890-92; Parker Fellow in Harvard University, studying in Bonn, Leipzig, and Munich, 1892-94; Assistant Professor of Botany, Indiana University, 1895-97; Acting Professor of Botany, University of Wisconsin, second semester, 1910-11. At Stanford since 1897.

‡PONZER, ERNEST WILLIAM,
Assistant Professor of Applied Mathematics.

B. S., Illinois, 1900, M. S., 1903. Instructor in Mathematics, University of Illinois, 1900-09. At Stanford since 1909.

[†PORTER, LANGLEY, SF, Pacific 1674
Clinical Professor of Medicine (Pediatrics), 44 Commonwealth, SF-sf]

B. S., Pennsylvania Military College, 1890; M. D., Cooper Medical College, 1896; L. R. C. P., M. R. C. S., England, 1900. Senior Dresser, London Hospital, 1900; Resident Physician, St. Mark's Hospital, London, 1901-02; City Physician, in charge of Contagious Diseases, San Francisco, 1903-08; Assistant Professor of Pediatrics, Cooper Medical College, 1905, Associate Professor, 1909-12. At Stanford since 1912.

†PRICE, GEORGE CLINTON, PA 1053
Professor of Zoology, 5 Alvarado

B. S., De Pauw, 1890; Ph. D., Stanford, 1897. Student in Biology, Johns Hopkins University, 1890-92; University of Munich, 1895-96. At Stanford since 1892.

†PROCTOR, WILLIAM MARTIN,
Instructor in Education, Los Altos

A. B., Whitman, 1901; A. M., Stanford, 1916. Teacher of History and Civics, Cheney (Wn.) State Normal School, 1909-10; Professor of Education, Pacific University, Forest Grove, Oregon, 1911-15, Dean of Faculty, 1914-15. At Stanford since 1916.

†REED, ALFRED CUMMINGS, SF, Fillmore 4276
Clinical Instructor in Medicine, 2429 Vallejo, SF-sf

A. B., Pomona, 1906; M. D., Bellevue Medical College, 1910. Instructor in Pharmacology, Bellevue Medical College, 1910-11; Assistant Surgeon U. S. Public Health Service, 1911-13; Attending Physician, Yale Hospital, Changsha, China, 1913-15. At Stanford since 1916.

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‡Deceased, December 20, 1917.

†Reining, Charles, PA 1040J
Instructor in German, 5 Salvatierra

A. B., Stanford, 1908; A. M., Harvard, 1911; Ph. D., Stanford, 1915. Student, Universities of Berlin, Munich, and Leipzig, 1908-10; Assistant Professor of German, Adelphi College, Brooklyn (N. Y.), 1911-13. At Stanford since 1915.

†Rendtorff, Karl Gustav, PA 449M
Professor of German, 318 Lincoln-p

A. M., Stanford, 1894, Ph. D., 1896. Student, University of Giessen, 1884-85, University of Kiel, 1885-91. At Stanford since 1894.

†Rigdon, Rufus Lee, SF, Fillmore 2285
Clinical Professor of Surgery (Genito-Urinary), 1617 Broderick, SF-sf

M. D., Cooper Medical College, 1887. Assistant and Instructor in Genito-Urinary Clinic, Cooper Medical College, 1888-98, Associate Professor of Genito-Urinary Surgery and Chief of Genito-Urinary Clinic, 1898-1908, Professor of Genito-Urinary Surgery, 1908-12. At Stanford since 1912.

†Ritter, Arthur John, San Anselmo 8
Lecturer on Mental Deficiency, Ross-r

Graduate Teachers' College, Zürich, Switzerland, 1897. Research Assistant, Racial Studies, Johannesburg (South Africa), 1898-1901; Student, Paris, 1902-03; Instructor des enfants arrières, Paris, 1904-05; Private Case Work with Feeble-minded Children, 1906-11; Principal, Home School for Nervous and Backward Children, 1912. At Stanford since 1916.

†Rixford, Emmet, SF, Franklin 5100
Professor of Surgery, 1795 California, SF-sf

B. S., California, 1887; M. D., Cooper Medical College, 1891. Adjunct Professor of Surgery, Cooper Medical College, 1893-98, Professor, 1898-1912; Visiting Surgeon, Lane Hospital, 1895, City and County Hospital, San Francisco, since 1899. At Stanford since 1909.

†Robinson, Edgar Eugene, PA 939J
Assistant Professor of American History, 1010 Bryant

A. B., Wisconsin, 1908, A. M., 1910. Assistant in History, University of Wisconsin, 1908-09, Fellow in American History, 1909-10; Assistant Professor of History, Carleton College, 1910-11; Instructor in History, University of Minnesota, Summer Session, 1912, Resident Lecturer, 1915-16; Assistant Professor of History, University of Michigan, Summer Session, 1916. At Stanford since 1911.

†Rogers, Austin Flint, PA 812J
Associate Professor of Mineralogy, 1047 Ramona-p

A. B., Kansas, 1899, A. M., 1900; Ph. D., Columbia, 1902. Assistant in Mineralogy, University of Kansas, 1898-1900; Assistant Geologist, University Geological Survey of Kansas, 1898-1900, 1903; Fellow in Mineralogy, Columbia University, 1900-02, Tutor in Mineralogy, 1902-05. At Stanford since 1905.

†Rogers, Frederick John, SJ 4589
Associate Professor of Physics, 550 S 6th, San Jose

M. S., Cornell, 1891. Instructor in Physics, Cornell University, 1892-1900. At Stanford since 1900.

†Ross, Perley Ason, PA 689J
Assistant Professor of Physics, 1830 Cowper

A. B., Stanford, 1908, A. M., 1910, Ph. D., 1911. At Stanford since 1908.

[†Rothganger, George, SF, Kearny 2206
Assistant Clinical Professor of Surgery, In Gov't Service]

A. B., California, 1885; M. D., Cooper Medical College, 1888. Medical Officer, United States Navy, 1889-1908. At Stanford since 1913.

†Rumwell, Melville E., SF, Fillmore 808
Assistant Clinical Professor of Surgery, 3467 Pacific, SF-sf

M. D., Cooper Medical College, 1895.

[Russell, (Mrs.) Theresa Peet,
Assistant Professor of English, New York, N. Y.]

Ph. B., Iowa, 1895. Teacher in Denison Normal School, 1895-96; Principal, Vilisca High School, 1896-98; Graduate Student at Radcliffe College, 1898-99; Teacher in Anamosa High School, 1899-1900. At Stanford since 1905.

†Ryan, Harris Joseph, PA 1075
Professor of Electrical Engineering, 453 Webster

M. E., Cornell, 1887. With Western Engineering Co., Lincoln, Neb., 1887-88; Instructor in Physics, Cornell University, 1888-89, Assistant Professor of Electrical Engineering, 1889-92, Associate Professor, 1892-95, Professor, 1895-1905; Judge, Board of Awards, World's Fair, Chicago, 1893; U. S. Government Delegate, International Electrical Congress, St. Louis Exposition, 1904. At Stanford since 1905.

†Sanford, Fernando, PA 646
Professor of Physics, 450 Kingsley

B. S., Carthage College, 1879, M. S., 1882. Student, University of Berlin, 1886-88; Professor of Physical Science, Mt. Morris College, 1879-82; Superintendent of Schools, Ogle County, Ill., 1882-86; Instructor in Physics and Chemistry, Englewood (Ill.) High School, 1888-90; Professor of Physical Science, Lake Forest University, 1890-91. At Stanford since 1891.

†Saph, Augustus Valentine,
Lecturer in Civil Engineering (winter quarter)
2330 Durant, Berkeley-b

B. S., California, 1894, M. S., 1896; M. C. E., Cornell, 1902.

†Schaller, Walter Frank, SF, Pacific 4495
Associate Clinical Professor of Medicine (Neurology),
140 24th ave., SF-sf

M. D., Cooper Medical College, 1902. Assistant in Pathology, Cooper Medical College, 1905-06; Assistant Surgeon, U. S. N., 1906-08. At Stanford since 1911.

[1]†Sears, Jesse Brundage, PA 689M
Associate Professor of Education, 1545 Waverley-p

A. B., Stanford, 1909. Student, University of Chicago, Summer Quarter, 1910; Research Scholar, Teachers' College, Coulmbia University, 1910-11; Instructor in Education, University of Wisconsin, 1909-10; Assistant in Educational Sociology, Teachers' College, Columbia University, Summer Session, 1911. At Stanford since 1911.

†de Setién, Felipe Morales,
Instructor in Romanic Languages, 453 Channing

B. A., University of Madrid, 1904, Licenciado en Filosofia y Letras, 1913. Graduate Student in Spanish Philology, Centro de Estudios Históricos, Madrid, 1916-17; Pensionado de la Junta Para Ampliacion de Estudios, Madrid. At Stanford since 1917.

†Sewall, Chester Durbin, Fillmore 3736
Clinical Instructor in Medicine, 2010 Vallejo, SF-sf

M. D., Cooper Medical College, 1906. At Stanford since 1915.

†Sewall, Edward Cecil, SF, Fillmore 4242
Clinical Professor of Surgery (Otology), 3515 Pacific, SF-sf

A. B., Stanford, 1898; M. D., Cooper Medical College, 1902. Assistant and Instructor in Ophthalmology, Cooper Medical College, 1901-07, Assistant Professor, 1907-09; Student in Freiburg, 1909-10; Associate Professor of Diseases of Eye, Ear, Nose, and Throat, Cooper Medical College, 1910-12. At Stanford since 1912.

[Seward, Samuel Swayze, Jr.,
Assistant Professor of English, In Government Service]

A. B., Columbia, 1896, A. M., 1897. Scholar in Literature, Columbia University, 1896-97; Assistant in Literature, 1897-99; Student, Oxford University, 1899-1900; Acting Professor of English, University of Nevada, 1907; Assistant Professor of English, University of California, Summer Session, 1907, University of Oregon, Summer Session, 1908. At Stanford since 1900.

[23]Show, Arley Barthlow, PA 865
Professor of European History, 446 Forest

A. B., Doane College, 1882; Graduate, Andover Theological Seminary, 1885; A. M., Doane, 1892. Pastor Congregational Church, Waco, Neb., 1885-87; Professor of History and English Literature, Doane College, 1887-92; Student, University of Leipzig, 1900-01; Lecturer on History of the Early Church, Pacific Theological Seminary, Berkeley, 1905-07. At Stanford since 1892.

†Sloan, William Henry, PA 1454R2
Assistant Professor of Chemistry, Alta Mesa, Box 105-p

A. B., Stanford, 1903, A. M., 1904. Student, University of Leipzig, 1904-05; Assistant Chemist, San Francisco Board of Health, 1905-06. At Stanford 1903-04 and since 1906.

†Slonaker, James Rollin, PA 451
Assistant Professor of Physiology, 334 Kingsley-p

B. S., Wisconsin, 1893; Ph. D., Clark, 1896. Fellow in Biology, Clark University, 1893-96; with United States Fish Commission, Woods Hole (Mass.), Summer, 1895; Instructor in Zoology, Indiana University, 1896-99, Indiana University Biological Station, 1896-1900; Assistant Professor of Zoology, Indiana University, 1899-1901; Research Assistant in Neurology, University of Chicago, 1901-02, Associate in Neurology, 1902-03. At Stanford since 1903.

†Smith, Elmer William, Franklin 8670
Instructor in Pathology, 1942 Webster, SF-sf

A. B., Stanford, 1912, M. D., 1915. At Stanford since 1916.

[†Smith, Everett Wallace,
Assistant Professor of English, In Government Service]

A. B., Stanford, 1899. At Stanford since 1910.

†Smith, James Perrin, PA 600M
Professor of Paleontology, 1335 Cowper-p

A. B., Wofford College, 1884; A. M., Vanderbilt, 1886; Ph. D., Göttingen, 1892; LL. D., Wofford College, 1916. Assistant Geologist and Chemist, Arkansas Geological Survey, 1887-90; Assistant Geologist, U. S. Geological Survey, 1895-1906, Geologist since 1906. At Stanford since 1892.

[1]†Smith, Stanley Astredo, PA 436J
Assistant Professor of French, 340 Embarcadero-p

A. B., Stanford, 1903, A. M., 1905. Assistant in Romanic Languages, Leland Stanford Junior University, 1903-04, Instructor, 1904-07; Student, Universities of Paris and Madrid, 1906-07; Instructor in French and Italian, University of Washington, 1907-11; Student, Harvard University, 1911-13, Instructor in Romance Languages, 1912-13; Professor of Romance Languages, Reed College, 1913-14. At Stanford 1903-07, and since 1914.

SNELL, (Mrs.) ELIZABETH BURRITT, Los Altos 56
Appointment Secretary, Los Altos
A. B., Stanford, 1908. At Stanford since 1916.

[†SNOW, WILLIAM FREEMAN,
Clinical Professor of Hygiene and Public Health,
Washington, D. C.]
A. B., Stanford, 1896, A. M., 1897; M. D., Cooper Medical College, 1900. Student, Johns Hopkins Medical School, 1901-02; Secretary California State Board of Health, 1909-13. At Stanford since 1901.

†SNYDER, JOHN OTTERBEIN, PA 600R
Associate Professor of Zoology, 1345 Cowper
A. B., Stanford, 1897, A. M., 1899. Assistant U. S. Fish Commission, 1897, 1899, 1904, 1915, 1916; Naturalist on U. S. S. Albatross engaged in deep sea investigations, 1902, 1906; Expert Ichthyologist, U. S. National Museum, 1914. At Stanford since 1897.

†SOMERS, GEORGE BURBANK, SF, Fillmore 296
Clinical Professor of Gynecology and Physician
Superintendent of Lane Hospital, 2662 Vallejo, SF-sf
A. B., Harvard, 1886; M. D., Cooper Medical College, 1888. Chief Surgeon, San Francisco Emergency Hospital, 1891-95; Adjunct to Chair of Gynecology, Cooper Medical College, 1889; Professor of Gynecology, 1901; Gynecologist to Lane Hospital, 1900-12. At Stanford since 1911.

†SPALDING, ALFRED BAKER, SF, Fillmore 826
Professor of Obstetrics and Gynecology, 2651 Green, SF-sf
A. B., Stanford, 1896; M. D., Columbia, 1900. House Surgeon, General Memorial Hospital, New York, 1900-01; Assistant Resident Physician, Sloane Maternity Hospital, New York, 1901-02; Instructor in Obstetrics, University of California, 1902-05, Assistant Professor, 1905-09, Professor, 1909-12. At Stanford since 1912.

SPERRY, JOHN A., SF, Pacific 1609
Clinical Instructor in Obstetrics and Gynecology,
141 Jordan, SF-sf

[†STANIFORD, WARREN PAUL,
Student Adviser, In Government Service]
A. B., Stanford, 1916.

†STANLEY, EDWARD JOHN, PA 544W
Instructor in Pattern Making, 269 Hawthorne-p
Machinist with Pacific Iron Works, San Francisco, 1879, Blacksmith, 1880, Draughtsman, 1881, Pattern Maker, 1883-86; Third Assistant Engineer, Steamer Alabama, 1882; Foreman Pattern Maker, Union Iron Works, San Francisco, 1886-1901, 1906. At Stanford since 1901.

[2]STARKS, (Mrs.) CHLOE LESLEY, PA 812M
Instructor in Education (Graphic Art), 1115 Ramona-p
At Stanford since 1899.

†STARKS, EDWIN CHAPIN, PA 812M
Assistant Professor of Zoology, 1115 Ramona-p
Assistant in United States Bureau of Biological Survey, 1897-99; Curator of the Museum and Assistant Professor of Zoology, University of Washington, 1899-1900. At Stanford since 1900.

†Stebbins, Horatio Ward, PA 652M
Instructor in Mechanical Engineering, 281 Addison-p

A. B., California, 1899; B. S., Massachusetts Institute of Technology, 1902. Assistant to Engineer of Tests, Southern Pacific Railroad Company, 1902-05; Engineer and Estimator, San Francisco Bridge Company, 1905-13. At Stanford since 1914.

†Stephenson, Henry Augustus, SF, Fillmore 4001
Assistant Professor of Obstetrics and Gynecology, 2299 Sacramento, SF-sf

A. B., Randolph-Macon College, 1906; M. D., Johns Hopkins Medical School, 1910. Assistant Resident Obstetrician, Johns Hopkins Hospital, 1911-12, Resident Obstetrician, 1912-14; Assistant in Obstetrics, Johns Hopkins Medical School, 1911-12, Instructor, 1912-14. At Stanford since 1914.

[2]†Stillman, Stanley,
Professor of Surgery, In Government Service

M. D., Cooper Medical College, 1889. Adjunct Professor of Surgery, Cooper Medical College, 1895-98, Professor of Surgery, 1898-1912; Assistant Visiting Surgeon, City and County Hospital, San Francisco, 1891-99; Visiting Surgeon, 1899-1912; Visiting Surgeon, Lane Hospital, 1895-1912. At Stanford since 1909.

Stoltenberg, Clara S., PA 1024
Associate Professor of Physiology, 7 Alvarado

A. B., Stanford, 1896, A. M., 1897. At Stanford since 1896.

[†Stolz, Herbert Rowell,
Assistant Professor of Physical Training and Medical Adviser of Men, In Government Service]

A. B., Stanford, 1911, M. D., 1914. Rhodes Scholar at Oxford, 1910-13. At Stanford since 1914.

†Stuart, Henry Waldgrave, PA 1069
Professor of Philosophy, 8 Alvarado

Ph. B., California, 1893; Ph. D., Chicago, 1900. Teacher, Hollister (Cal.) H. S., 1893-94; Fellow in Political Economy, University of Chicago, 1894-96; Instructor (pro tem.) in Economics and Psychology, Washington University, St. Louis, 1896-97; Teacher, Central School, Oakland (Cal.), 1897-98; Principal Woodland (Cal.) H. S., 1898-99; Fellow in Philosophy, University of Chicago, 1899-1900; Instructor in Economics and History, Ripon College, 1900-01; Instructor in Philosophy, State University of Iowa, 1901-04; Acting Professor of Philosophy, Lake Forest College, 1904-05, Assistant Professor, 1905-07. At Stanford since 1907.

Sutliff, Helen Binninger, PA 876
Chief Cataloguer, Library, 19 Salvatierra

A. B., Kansas, 1890. Head Cataloguer, University of Kansas Library, 1891-1905; Cataloguer in Columbia University Library, Summer, 1901. At Stanford since 1906.

[2]†Swain, Robert Eckles, PA 247
Professor of Physiological Chemistry, 638 Channing-p

A. B., Stanford, 1899; M. S., Yale, 1901, Ph. D., 1904. Student, Universities of Strassburg and Heidelberg, 1901-02, Yale University, 1909-10. At Stanford since 1898.

[2]†Tatlock, John S. P., PA 161M
Professor of English Philology, 5 Santa Ynez

A. B., Harvard, 1896, A. M., 1897, Ph. D., 1903. Student, Universities of Michigan, 1899-1901, Freiburg im Breisgau, 1904; Instructor in English, Uni-

versity of Michigan, 1897-1901, 1903-05, Assistant Professor, 1905-07, Junior Professor, 1907-12, Professor, 1912-15; Professor of English, University of Chicago, Summer Quarter, 1909, Dartmouth College, Summer Session, 1914. At Stanford since 1915.

†Terman, Lewis Madison, PA 1178
Professor of Education, 9 Dolores

A. B., Indiana, 1902, A. M., 1903; Ph. D., Clark University, 1905. Fellow in Psychology and Education, Clark University, 1903-05; Principal of High School, San Bernardino (Cal.), 1905-06; Head of Department of Child Study and Pedagogy, Los Angeles State Normal School, 1906-10; Instructor in Education, Indiana University, Summer Session, 1909, New York University, Summer Session, 1916. At Stanford since 1910.

†Tolman, Cyrus Fisher, Jr., PA 1052R
Associate Professor of Economic Geology, 6 Alvarado

B. S., Chicago, 1896. Fellow in Geology, University of Chicago, 1897-98; Consulting Economic Geologist since 1898; Professor of Geology, University of Arizona, 1905-06; Professor of Geology and Mining, 1906-12; Territorial Geologist of Arizona, 1910-12. At Stanford since 1912.

†Townley, Sidney Dean, PA 1016
Associate Professor of Applied Mathematics, 33 Salvatierra

B. S., Wisconsin, 1890, M. S., 1892; D. Sc., Michigan, 1897. Fellow in Astronomy, University of Wisconsin, 1890-91, Assistant in Astronomy and Mathematics, 1891-92; Hearst Fellow in Astronomy, University of California (Lick Observatory), 1892-93; Instructor in Astronomy, University of Michigan, 1893-95, 1896-98; Student, Universities of Berlin and Munich, 1895-96; Instructor in Practical Astronomy, University of California, 1898-1903; Lecturer in Astronomy, 1904-07; Astronomer in charge of International Latitude Observatory, 1903-07. At Stanford since 1907.

†Treat, Payson Jackson, PA 1128
Professor of History, 8 Dolores

A. B., Wesleyan, 1900; A. M., Columbia, 1903; Ph. D., Stanford, 1910. Instructor in History, Barnard School, New York City, 1900-03; Graduate Student, Leland Stanford Junior University, 1903-05; Research Student in Far East, 1906-07; Instructor in Government, Harvard University, 1908-09; Lecturer in Political Science, University of California, second semester, 1915-16. At Stanford since 1905.

True, Helen Ella, PA 538R
Secretary to the President, 682 University-p

A. B., Mt. Holyoke, 1905. At Stanford since 1914.

[†Tupper, Roland Beatty, SF, Park 1546
Clinical Instructor in Medicine, In Government Service]

M. D., Cooper Medical College, 1910. Assistant Visiting Physician, St. Luke's Hospital, 1912; Assistant in Pediatrics, Cooper Medical College, 1912; Assistant Visiting Surgeon, San Francisco Hospital, since 1912; On Diagnostic Section, St. Luke's Hospital Clinical Club, since 1915. At Stanford since 1912.

Vail, Muriel, PA 481R
Instructor in Physical Training, 270 Kellogg-p

Teaching Certificate, Austen College, Warwickshire, England, 1911; Director of Physical Training, Girls' High School, Pretoria, S. Africa, 1911-16; Instructor in Physical Training, Mills College, 1916-17, University of California, Summer Session, 1917. At Stanford since 1917.

†Vernier, Chester Garfield, PA 254
Professor of Law, 951 Bryant-p

A. B., Butler College, 1903; J. D., Chicago, 1907. Graduate Scholar, Univer-

sity of Chicago, 1904-05; Instructor in Law, Indiana University, 1907-08; Professor of Law, University of Nebraska, 1908-09, Indiana University, 1909-11, University of Illinois, 1911-16; Lecturer in Law, University of Chicago, Summer Quarters, 1911, 1912, University of Michigan, Summer Session, 1914. At Stanford since 1916.

VOLKMAR, WALTER SCHUYLER,
Professor of Military Science and Tactics,
(beginning winter quarter), Palo Alto Hotel-p

Captain, U. S. A., retired.

deVRIES, LOUIS PETER, PA 533J
Instructor in Romanic Languages, 603 Waverley

A. M., Wisconsin, 1911, Ph. D., 1913. Student, University of Leyden, 1909; Assistant and Teaching Fellow in Romance Languages, University of Wisconsin, 1910-12. At Stanford since 1913.

†WEST, VICTOR J., PA 291J
Assistant Professor of Political Science, 376 Addison-p

Ph. B., Chicago, 1905. Instructor in English and Civics, Bradley Polytechnic Institute 1905-06; Fellow in Political Science, University of Chicago, 1908-10, Assistant in Political Science, 1910; Instructor in Politics, Northwestern University, 1910-13; Assistant Chief of Service, Illinois Progressive Service Board, 1913; Instructor in Political Science, University of California, Summer Session, 1915. At Stanford since 1913.

†WEYMOUTH, FRANK WALTER,
Assistant Professor of Physiology, 3 Salvatierra

A. B., Stanford, 1909, A. M., 1911. Assistant in Physiology, Johns Hopkins University, 1912-13. At Stanford since 1910.

†WHITAKER, ALBERT CONSER, PA 1042J
Professor of Economics, 7 Cabrillo

A. B., Stanford, 1899; Ph. D., Columbia, 1904. Scholar in Economics, Columbia University, 1899-1900, Fellow, 1900-01; Student, University of Berlin, 1901; Lecturer in Economics and Social Science, Columbia University, 1906-07; Lecturer in Economics, University of California, Summer Session, 1906, 1911; Acting Professor of Economics, University of Chicago, second half of 1911-12 and 1912-13. At Stanford since 1902.

†WHITTIER, CLARKE BUTLER, Menlo Park 1443R1
Professor of Law, Menlo Heights

A. B., Stanford, 1893; LL. B., Harvard, 1896. Attorney at Law, Los Angeles, 1895-96; Student, Leland Stanford Junior University, 1896-97, Instructor in Law, 1897-99, Assistant Professor, 1899-1900, Associate Professor, 1900-02; Professor of Law, University of Chicago, 1902-14. At Stanford 1897-1902, and since 1915.

†WILBUR, RAY LYMAN, PA 46
President of the University, 1201 Bryant

A. B., Stanford, 1896, A. M., 1897; M. D., Cooper Medical College, 1899. Assistant in Physiology, Leland Stanford Junior University, 1894-96, Instructor, 1896-97, Assistant Professor, 1900-03; Lecturer and Demonstrator in Physiology, Cooper Medical College, 1899-1900, Professor of Medicine and Dean of the Medical School, 1909-16. At Stanford 1894-97, 1900-03, and since 1909.

[2]†WILDMAN, MURRAY SHIPLEY, PA 1179
Professor of Economics, In Government Service

A. B., Earlham, 1893; Ph. D., Chicago, 1904. Professor of History and Economics, Central College (Mo.), 1904-05; Instructor in Economics, University of Missouri, 1905-06, Assistant Professor, 1906-08; Acting Assistant Pro-

fessor, University of Chicago, Summer Quarter, 1909; Assistant Professor of Economics and Commerce, Northwestern University, 1909-11, Professor, 1911-12. At Stanford since 1912.

†Willis, Bailey, PA 1118
Professor of Geology, 5 Lasuen

E. M., Columbia School of Mines, 1878, C. E., 1879; Hon. Ph. D., University of Berlin, 1910. Special Expert, Iron Ores, Tenth Census, 1879-81; Geologist, Northern Transcontinental Survey, exploration for Northern Pacific and Allied Companies, 1881-84; Geologist, United States Geological Survey, in charge Appalachian Division, New York to Alabama, Cascade Range and Puget Sound Division, Washington, and Editor Geologic Atlas of the United States, 1884-1915; Assistant to Director, United States Geological Survey, 1897-1902; Geologist in charge of Divsion of Areal and Stratigraphic Geology, 1900-06; Geologist engaged in Geological explorations in China under asupices of Carnegie Institution, 1903-04; Lecturer on Geology, Johns Hopkins University, 1895-1902, University of Chicago, 1909; Consulting Geologist to Minister of Public Works, Argentina, 1911-14. At Stanford since 1915.

[†Wing, Charles Benjamin,
Professor of Structural Engineering, In Government Service]

C. E., Cornell, 1886. Fellow in Civil Engineering, Cornell University, 1886-87, Instructor, 1887-90, Assistant Professor, 1890-91; Engineer, Pompton (N. J.) Powder Co., 1887, Phoenix Powder Co., Farmingdale, N. Y., 1888; Assistant Engineer, Berlin (Conn.) Iron Bridge Co., 1889-90; Professor of Bridge and Hydraulic Engineering, University of Wisconsin, 1891-92. At Stanford since 1892.

[Wolfsohn, Julian Mast, SF, Fillmore 1526
Assistant Clinical Professor of Medicine (Neurology),
2238 Divisadero, SF-sf]

A. B., University of California, 1905, M. S., 1907; M. D., Johns Hopkins University Medical School, 1911. Research Assistant, Herzstein Laboratory, University of California, 1906-07; Medical House Officer, Johns Hopkins Hospital, 1911-12. At Stanford since 1913.

[23]†Woolsey, Chester Howard, SF, Fillmore 941
Clinical Instructor in Surgery, In Government Service

B. S., California, 1895, M. D., 1901. Assistant to Chair of Clinical Medicine, University of California, 1902-06; State Bacteriologist, California, 1903-04; Assistant to Chair of Genito-Urinary Surgery, Cooper Medical College, 1911-12. At Stanford since 1912.

†Yerington, Henry Herbert, SF, Fillmore 1251
Assistant Professor of Medicine (Pediatrics),
2632 Fillmore, SF-sf

M. D., Columbia University, 1908. Student, Stanford University, 1900-04, Bellevue Hospital, New York, 1909-10; House Physician, Pediatric Service, Bellevue Hospital, 1909-10. Instructor in Pediatrics, Cooper Medical College, 1910-11; Visiting Pediatrician, San Francisco Hospital, Assistant Visiting Staff, Children's Hospital, San Francisco. At Stanford since 1913.

[23]Young, Hayes Wilson, PA 1013
Assistant Professor of Metallurgy, 333 Encina Hall

A. B., Stanford, 1911, Engineer, 1912. At Stanford since 1911.

Young, Stewart Woodford,
Professor of Physical Chemistry, Menlo Heights

B. S., Cornell, 1890. Assistant in Chemistry, Cornell University, 1890-91; Instructor in Chemistry, Swarthmore College, 1891-93. At Stanford since 1893.

ASSISTANTS IN INSTRUCTION

†Adams, William Louis, Pediatrics, 2221 Larkin, SF-sf
M. D., Tulane Medical School, 1890.

Adler, Howard Felix, Surgery, (Genito-Urinary), 1590 Broadway, SF-sf
B. S., California, 1904; M. D., Harvard, 1908. German Hospital, New York City, 1908-11.

Bailey, Margery, English, 530 Warren, Redwood
A. B., Stanford, 1914, A. M., 1916.

Bailiff, Laurence Deane,
Romanic Languages (winter quarter), Encina

Bennett, Albert Arms, English Philology, 905 Scott-p
A. B., Michigan, 1915, A. M., 1917. Assistant in Sociology, University of Michigan, 1914-15, Instructor in English, 1915-17.

deBernardi, Alice, Romanic Languages, Madroño
A. B,. Stanford, 1916, A. M., 1917.

Brady, Emmet James, Obstetrics and Gynecology, 1858 Green, SF-sf
A. B., Stanford, 1911, M. D., 1914. Senior Interne, Lane Hospital, 1914-15.

†Burke, Charles Victor, Bacteriology (winter quarter), 603 Lytton-p
A. B., Stanford, 1907, A. M., 1908, Ph. D., 1912.

Burke, (Mrs.) Georgiana Spooner,
Bacteriology (autumn quarter), 603 Lytton-p
A. B., Vassar, 1907; A. M., Columbia, 1908.

†Burrows, John Robert, Surgery (Eye), 2007 Buchanan, SF-sf
M. D., Cooper Medical College, 1906. Assistant in Ophthalmology, Cooper Medical College, 1909.

[23]†Butler, Edmund, Obstetrics and Gynecology, In Gov't Service
M. D., Cooper Medical College, 1911. Resident Surgeon and Senior Interne in Surgery, Lane Hospital, 1912-14; Surgeon Municipal Emergency Hospital, since 1914; Associate Member of Staff of St. Luke's Hospital, since 1914.

Clark, Laura Cornelia, Mathematics, 1022 Bird, SJ-sj
A. B., Stanford, 1915, A.M., 1916.

†Crandal, Jesse R., Education (autumn quarter), 225 Homer-p
A. B., Stanford, 1918.

Dalzell, William Campbell, Law, Encina
A. B., Stanford, 1912.

†Dysinger, Earl Scott, Economics, 824 Bryant-p
A. B., Stanford, 1917.

Ehrenclou, Alfred Hjalmar, Obstetrics and Gynecology, Lane Hospital, SF-sf
A. B., Stanford, 1914, M. D., 1917.

†Elsey, Howard McKee, Chemistry, 734 Middlefield-p
A. B., Stanford, 1914.

Énenkel, William Alexander, Romanic Languages, Encina
A. B., University of Southern California, 1917.

†Ferris, Gordon Floyd, Entomology, 640 Waverley
A. B., Stanford, 1916.

Gates, Amelia L., Medicine (Pediatrics), 860 Hyde, SF-sf
M. D., Cooper Medical College, 1894. Student, Johns Hopkins University, 1895, Vienna, 1906-08.

Greening, Helen Kathleen, Latin, 32 Lasuen
A. B., Stanford, 1917.

†Haas, Sylvan Lewis, Surgery (Genito-Urinary), Presidio, SF-sf
B. S., University of California, 1904; M. D., Johns Hopkins Medical School, 1908.

†Harbaugh, Ross Wallace, Surgery (SF Hospital), 674 10th av., SF-sf
A. B., Stanford, 1909, M. D., 1913. Interne, City and County Hospital, San Francisco, 1913-14; Resident Physician, St. Mary's Hospital, San Francisco, 1914-15; Stanford Assistant in Surgery, San Francisco Hospital, since 1915.

†Haberdier, Oliver Ambrose, Clinic Dentist, 2841 23rd, SF-sf
D. D. S., Iowa, 1914. Instructor in Prosthetic Dentistry, University of California, 1916-18, Demonstrator in Radiography, 1915-16, Clinical Instructor in Operative Dentistry, 1914-15.

Haydock, Evelyn Gladys, Physics, 487 N. 5th, SJ-sj
A. B., Stanford, 1916, A. M., 1917.

Hipp, John, Jr., Physics (autumn quarter), Encina Hall
A. B., University of Denver, 1916.

†Huffaker, Anthony, Medicine (Pediatrics), 1739 Pine, SF-sf
M. D., Cooper Medical College, 1890.

Humphries, (Mrs.) Florence Yost, English, Los Gatos-lg
Ph. B., Cornell, 1888; A. M., Stanford, 1916.

†Hund, Harry O., Surgical Clinic, San Rafael

Jenkins, Leonard R., Obstetrics and Gynecology, Lane Hospital, SF-sf
A. B., Stanford, 1913, M. D., 1916.

Kay, Willard E., Medicine, Lane Hospital, SF-sf
A. B., Stanford, 1912, M. D., 1916.

†Kenney, William A., Medicine, 1379 6th av., SF-sf

Kimberlin, Lester O., Surgery (clinic), 616 Baker, SF-sf
M. D., Cooper Medical College, 1911. Interne, Lane Hospital, 1912, Senior Interne, Obstetrics and Gynecology, 1912-13.

Kingsley, (Mrs.) Perle Shale, English, Kingscote Apts.

†Kirk, Josiah H., Surgery (Ear, Nose, Throat), Monadnock Bldg., SF-sf

†Lanz, Henry, Russian (winter quarter), 750 Bryant-p

Layman, Mary H., Medicine (Pediatrics), San Francisco

[Leach, Charles Nelson, Medicine (Dermatology), In Government Service]
A. B., Stanford, 1909, M. D., 1913.

Levy, Gaston J., Chemistry, 221 Encina
A. B., Stanford, 1916, Engineer, 1917.

†Montgomery, William O., Surgery (Ear, Nose, Throat), 728 Page, SF-sf
M. D., Cooper Medical College, 1907. Emergency Surgeon, 1908-09.

Morgan, Raymond, Physics (autumn quarter), Encina
A. B., Indiana, 1916, A. M., 1917.

Oberlé, Eugene Jean, Romanic Languages, 611 Bryant
A. B., Stanford, 1915, A. M., 1916.

Park, (Mrs.) Frances Odenheimer, Roble Gymnasium, 660 Tennyson-p

†Pierson, Philip Hale, Medicine (Tuberculosis), 134 17th ave., SF-sf
A. B., Yale, 1908; M. D., Harvard, 1913. House Officer, Massachusetts General Hospital, 1914-15.

Rakestraw, Norris Watson, Chemistry, 219 Encina
A. B., Stanford, 1916, A. M., 1917.

[†Read, Jay Marion, Medicine (U. S. A. Med. Reserve Corps), In Government Service]
B. S., California, 1912, M. S., 1913; M. D., Stanford, 1915.

Rich, Willis Horton,, Physiology, University Park
B. S., Lombard, 1905; A. B., Stanford, 1909.

†Scofield, Frank A, Economics, 1221 Webster-p

[Sellards, John Armstrong, Romanic Languages, In Government Service]
A. B., Illinois, 1912; A. M., Stanford, 1916.

Sharp, Otis Allen, Surgery (Eye), (winter quarter), 84 Yosemite ave., Oakland-o

Sherer, (Mrs.) Gertrude Roberts, English, Alvarado Hall
B. L., Smith, 1901; A. M., Stanford, 1917.

Siefert, Alfred Camille, Surgery, San Francisco Hospital, SF-sf
A. B., Stanford, 1911, M. D., 1914.

Strickler, John Philip, Surgery, Lane Hospital, SF-sf
A. B., Stanford, 1913, M. D., 1916.

Suydam, Clinton Hamilton, Physics (winter quarter), Encina

Taintor, Mary B., Latin, Madroño
A. B., Ripon College, 1911, A. M., 1916.

Trace, Gertrude May, Psychology, 730 University, SJ-sj
A. B., Stanford, 1914.

Walter, Arthur, Mathematics (winter quarter), Encina

Weeks, Pearl May, Physics, 567 Lincoln
A. B., Stanford, 1916.

[23]Wolfsohn, Frederick, Clinic Dentist, In Government Service
B. S., California, 1910, D. D. S., 1916.

Woodbridge, Elizabeth Dana, Romanic Languages, 7 Salvatierra
A. B., Vassar, 1907.

†Wrinkle, George Scott, Surgery (Ear, Nose, Throat), 3273 Mission, SF-sf

LIBRARY STAFF

†Clark, George Thomas, Librarian.
Brooks, Lucia May, Chief of Serial Department.
Hadden, Elizabeth, Chief of Order Department.
Hays, Alice Newman, Reference Librarian.
Ophüls, Louise, Medical Librarian, Lane Medical Library.
†Park, Charles V., Assistant Librarian.
Sutliff, Helen Binninger, Chief Cataloguer.

Almond, Nina, Cataloguer, 2 Lasuen
Brinton, Margaret, Cataloguer, Lane Medical Library, 2211 California, SF-sf
Crutcher, Ruth, Secretary, 8 Lasuen
Cruttenden, Elsie B., Cataloguer, Madroño
Flügel, Hildegarde, Cataloguer, 1153 Cowper-p
Gale, Helen Avery, Reference Department, 940 Waverley-p
Green, Gladys, Assistant, Serial Department, Madroño
Griffin, Raymond Rudolph, Law Librarian, 26 Lasuen
Katz, Louise W., Cataloguer, Lane Medical Library, 2526 Buena Vista, Berkeley-b
Redwine, Wendell Earl, Loan Desk, 26 Lasuen
Smith, Mildred, Order Department, 847 Bryant-p
Stillman, Minna, Cataloguer, 2 Lasuen
A. B., Stanford, 1903.
Stillson, Grace Elizabeth, Typist, 451 Ruthven-p
A. B., Stanford, 1915.
Sweeney, Luella, Lane Medical Library, 2321 Sacramento, SF-sf
Talbot, Sterling J., Loan Desk, Menlo Heights
Todd, Hannah Lilian, Bindery, 557 Hamilton-p
Woods, Lois May, Cataloguer, Madroño

ASSISTANTS IN ADMINISTRATION

PRESIDENT'S OFFICE

Jones, Edith Maud, Stenographer, President's Office, 412 Everett-p
McKay, Gladys B., Stenographer, Appointment Office, 251 Emerson-p
Murray, Margaret, Assistant to Academic Secretary, 1011 Fulton-p

Ramsey, (Mrs.) Agnes Craig, Mimeographer, 20 Lasuen
Yates, (Mrs.) Alice W., Stenographer, Los Altos

REGISTRAR'S OFFICE

Crellin, Ruth, Stenographer, 19 Salvatierra
A. B., Stanford, 1913.
Howe, Mollie Margaret, Assistant to Registrar, 375 Everett-p
A. B., Stanford, 1914, A. M., 1915.

TECHNICAL ASSISTANTS

†Banham, Frank Daniel, Foreman, Mechanician Shop, 826 Waverley-p
Bell, (Mrs.) May Knight, Entomology, 532 Homer-p
Boulware, Edna, Stenographer, Chemistry, 170 Bryant-p
†Bruce, Walter Johnson, Chemistry, 327 Webster-p
Crowe, Harold Enos, Bacteriology (autumn quarter), 13 Salvatierra
A. B., Stanford, 1917.
Eiskamp, Ehler, Bacteriology, 446 Forest-p
Ferris, (Mrs.) Roxana Stinchfield, Botany, 640 Waverley
†Havens, Myrtil Cole, Mechanician, Machine Shop, 727 Cowper-p
Huskey, (Mrs.) Anne K., Stenographer, Civil Engineering, 555 Lytton
McInnis, P., Custodian, Encina Gymnasium, Mayfield-m
McKendry, Marion, Stenographer, Law, 1035 Bryant-p
Oldroyd, (Mrs.) Ida S., Curator, Geology and Mining, 10 Alvarado
†Oldroyd, Thomas S., Assistant Curator, Geology and Mining, 10 Alvarado
Overacker, Louise, Stenographer, Economics, 1 Alvarado
A. B., Stanford, 1915, A. M., 1917.
Phelps, (Mrs.) Margaret Livengood, Education, 261 Homer-p
B. L., Berea College, 1906.
Putnam, Dorothy, Secretary, School of Education, 667 Melville
A. B., Stanford, 1916.
Roche, Thomas J., Mechanical Engineering, 231 Palo Alto-p
Robinson, (Mrs.) Faith Swift, Physical Training, 209 Addison-p
A. B., Stanford, 1912.
Schnell, Delis, Stenographer, Mechanical Engineering, Mayfield-m
Scott, Thomas Benjamin, Storekeeper, Chemistry, Mayfield-m
Shimada, Teizo Kainan, Anatomy, 827 Ramona-p
Stuart, Burton G., Mechanical Engineering (autumn quarter), Mayfield-m
†Uhlman, Walter, Engineer, Mechanical Engineering, 230 Emerson-p
Whitmer, (Mrs.) Flora M., Stenographer, History, 334 Homer-p

ORGANIZATION

Foundation

THE Leland Stanford Junior University was established under an Act of the Legislature, approved March 9, 1885, entitled "An Act to advance learning, the arts and sciences, and to promote the public welfare by providing for the conveyance, holding, and protection of property, and the creation of trusts for the founding, endowment, erection, and maintenance within this State of universities, colleges, schools, seminaries of learning, mechanical institutes, museums, and galleries of art." The Founding Grant, executed November 11, 1885, was made public at a meeting of the Board of Trustees, held in San Francisco, November 14, 1885. The cornerstone of the inner quadrangle was laid May 14, 1887, and the institution opened to students October 1, 1891.

Nature, Object, and Purposes of the University

'We, Leland Stanford and Jane Lathrop Stanford, husband and wife, grantors, desiring to promote the public welfare by founding, endowing, and having maintained upon our estate known as the Palo Alto Farm, and situated in the Counties of San Mateo and Santa Clara, State of California, United States of America, a university for both sexes, with the colleges, schools, seminaries of learning, mechanical institutes, museums, galleries of art, and all other things necessary and appropriate to a university of high degree, to that end, and for that purpose, do hereby grant,' etc.

'And that the trust hereby created may be executed according to the wishes of the grantors and each of them, they do hereby designate the Nature, Object, and Purposes of the Institution hereby founded, to be:

'Its nature, that of a University, with such seminaries of learning as shall make it of the highest grade, including mechanical institutes, museums, galleries of art, laboratories, and conservatories, together with all things necessary for the study of agriculture in all its branches, and for mechanical training, and the studies and exercises directed to the cultivation and enlargement of the mind;

'Its object, to qualify students for personal success and direct usefulness in life;

'And its purpose, to promote the public welfare by exercising an

influence in behalf of humanity and civilization, teaching the blessings of liberty regulated by law, and inculcating love and reverence for the great principles of government as derived from the inalienable rights of man to life, liberty, and the pursuit of happiness.'

Name of the University

'Since the idea of establishing an institution of this kind for the benefit of mankind, came directly and largely from our son and only child, Leland, and in the belief that had he been spared to advise as to the disposition of our estate, he would have desired the devotion of a large portion thereof to this purpose, we will that for all time to come the institution hereby founded shall bear his name, and shall be known as The Leland Stanford Junior University.'

Management and Control of the University

The general management and control of the institution is vested in a Board of Trustees originally numbering twenty-four, and chosen for life. By the Amending Act of May 31, 1899, the number of trustees is reduced to fifteen, with future elections for a term of ten years. The Board of Trustees fills all vacancies.

Powers and Duties of the Trustees

'The Trustees shall have power and it shall be their duty:

'To appoint a President of the University, who shall not be one of their number, and to remove him at will.

'To fix the salaries of the President, Professors, and Teachers, and to fix them at such rates as will secure to the University the services of men of the very highest attainments.

'To establish and maintain at such University an educational system which will, if followed, fit the graduate for some useful pursuit, and to this end to cause the pupils, as early as may be, to declare the particular calling which in life they may desire to pursue. . . .

'To prohibit sectarian instruction, but to have taught in the University the immortality of the soul, the existence of an all-wise and benevolent Creator, and that obedience to His laws is the highest duty of man.

'To have taught in the University the right and advantages of association and coöperation.

'To afford equal facilities and give equal advantages in the University to both sexes.

'To maintain on the Palo Alto estate a farm for instruction in agriculture in all its branches.

'The Board of Trustees shall annually report all their proceedings to the person who for the time being shall fill the office of Governor of the State of California, and shall accompany such report with a full account of their financial operations for the preceding year, and with a statement of the financial affairs of the institution.'

Powers and Duties of the President

'It shall be the duty of the Trustees to give to the President of the University the following powers:

'To prescribe the duties of the professors and teachers; to remove professors and teachers at will; to prescribe and enforce the course of study and the mode and manner of teaching; such other powers as will enable him to control the educational part of the University to such an extent that he may justly be held responsible for the course of study therein and for the good conduct and capacity of the professors and teachers.'

Amendments to the Founding Grant

A clause in the Founding Grant reserved to the grantors the right to alter, amend, or modify the terms and conditions of the grant in important particulars. Under this provision amendments were made by Mrs. Stanford, June 1, 1897; May 31, 1899; March 28, 1902; October 3, 1902; June 1, 1903. These amendments were concerned mainly with matters of detail, but provided also "that the number of women attending the University as students shall at no time ever exceed five hundred."

An Amendment to the Constitution of the State of California, adopted November 6, 1900, "permitted, approved, and confirmed all the trusts, estates, terms, and conditions" of the Founding Grant and of all the deeds, conveyances, and other instruments made and delivered before that date, and authorized the Legislature, under certain conditions, to exempt the property of the University from taxation. Article 13 of the State Constitution, as amended November 3, 1914, exempts from taxation the buildings, grounds (not exceeding one hundred acres), equipment, securities, and income, used exclusively for educational purposes, of any educational institution of collegiate grade not conducted for profit.

The University Faculty

'The Trustees shall constitute the President and professors the faculty of the University, and shall prescribe their powers and duties as such.'

Under the Articles of Organization, adopted by the Board of Trus-

tees March 31, 1904, the power and authority of the University Faculty is vested in the Academic Council, consisting of the president of the University, the professors and associate professors, the librarian, the registrar, the academic secretary, such assistant professors as have been upon the roll of the faculty for three years, whether as assistant professors or instructors, and such other officers of the University or members of the teaching staff as the Academic Council may, with the assent of the Board of Trustees, determine.

All general University regulations, statutes, and rules as to matters within the province of the faculty, must be initiated in and passed by the Academic Council. The Academic Council has general power and responsibility for the internal administration of the University, subject to express provisions contained in the Articles of Organization respecting the methods of exercising such powers through the President of the University, the Advisory Board, the Standing Committees, and the Department Faculties.

The Advisory Board consists of nine members of the rank of professor, one from each of the five department groups, and four chosen without reference to groups. All executive acts of general importance, such as recommendations for appointments, promotions, and dismissals, for the creation of new departments or chairs, etc., must be submitted by the President to the Advisory Board. The Advisory Board is also privileged to make such recommendations to the President, regarding policy, as it may decide by vote to be expedient, but no recommendations for appointments, promotions, or dismissals, may originate with the Advisory Board.

The Executive Committee of the Academic Council consists of the president, vice-president, registrar, academic secretary, and two members from each department group elected by the Academic Council. The Executive Committee appoints the Academic Committees of the Council.

The Standing Administrative Committees of the Council are appointed by the President.

The Department Faculties consist of the professors, associate professors, assistant professors, and instructors in the several departments, but only members of the Academic Council have the right to vote. A Department Faculty has direction of the work of instruction in the department and of the internal administration of the department, subject only to such control as is vested in the Board of Trustees, the President of the University, and the Academic Council. The Executive Head of the Department Faculty is designated annually by the President with the approval of the Advisory Board and of the Board of Trustees.

Departments

The work of the University embraces the following departments, divided into groups for the purpose of elections to the Advisory Board and Executive Committee, as indicated:

(I) Greek, Latin, Germanic Languages, Romanic Languages, English; (II) Botany, Physiology, Zoology, Entomology and Bionomics, Medicine, Anatomy, Bacteriology and Experimental Pathology; (III) Psychology, Mathematics, Physics, Chemistry, Geology and Mining; (IV) Philosophy, Education, History, Economics, Law; (V) Applied Mathematics, Civil Engineering, Mechanical Engineering, Electrical Engineering.

The Hopkins Marine Station, located at Pacific Grove, on the Bay of Monterey, is a branch of the biological work of the University.

Location

The seat of the University, except for the advanced and clinical work in Medicine, is at Stanford University, in the Santa Clara Valley, thirty miles southeast of San Francisco, on the Coast Division of the Southern Pacific Railway. The grounds of the University consist of over seven thousand acres, partly level and partly rising into the foothills of the Santa Cruz Range. The Bay of San Francisco lies about three miles east of the University grounds. Across the bay the Mount Diablo Range rises to a height of over four thousand feet, the Lick Observatory crowning Mt. Hamilton, the highest of the range. The Santa Clara Valley is one of the most attractive portions of the State in fertility, in natural beauty, and in the excellence of its climate. In winter the mercury rarely falls below 30 degrees, with an average midday temperature of about 55 degrees. In summer the midday temperature ranges between 60 degrees and 80 degrees, with occasional higher and lower numbers, the average being about 70 degrees; the nights are cool, the usual range being from 50 degrees to 58 degrees. The rainfall, normally about eighteen inches, is chiefly confined to the months from December to April, inclusive.

Buildings

The central group of buildings, constituting two quadrangles, the one surrounding the other, is an adaptation of the Mission Architecture, and reproduces on an imposing scale the open arches, long colonnades, and red tile roofing of the old Spanish Missions of California. The Inner Quadrangle consists of twelve one-story buildings and the Memorial Church, connected by a continuous open arcade, and surrounding a court 586 feet long by 246 feet wide, or three and a quarter

acres. The buildings are of buff sandstone, somewhat varied in color, the stonework of broken ashlar, with rough rock-face, and the roofs covered with red tile.

The fourteen buildings of the Outer Quadrangle are constructed of the same material and in the same general style as the Inner Quadrangle, with open arcades on the outside. The extreme length of the Outer Quadrangle is 894 feet.

The Leland Stanford Junior Museum, situated a quarter of a mile from the Quadrangles, on the west side of the Palo Alto Avenue, contains the archæological and art collections of the University.

The Chemistry Building, located between the Quadrangles and the Museum, consists of two separate structures—the main building and the Assaying Laboratory.

Behind the central quadrangles are located the workshops of the Engineering departments, experimental laboratories, etc.

The dormitories are east and west of the Quadrangles. Encina Hall, for men, is at the east, and has accommodations for four hundred and fifty students. Roble Hall, for women, is at the west, and will accommodate one hundred students. Madrono Hall, a frame building, at present leased to private parties, receives only women students. It will accommodate about thirty students.

The Men's Gymnasium is a brick building with a frontage of 330 feet, situated north of Encina Hall and near the athletic grounds. There are two main divisions separated by a small court. The drill hall is 120x65 feet, with hard maple floor. There are rooms for special exercises, shower and locker rooms in each wing, ample offices, and space for storage and laundry. An outdoor swimming pool, 100x40 feet, has been constructed by the Associated Students, and is available to all men students upon payment of student body dues.

Roble Gymnasium for women is a frame building equipped with the apparatus and appliances for physical training. A swimming pool, 75x40 feet, is located near the gymnasium. In connection with the pool there are eighteen shower rooms, seventy-two dressing rooms, a laundry and sterilizing plant to care for the swimming suits, and a room for their drying.

The University Inn is a frame building intended primarily as a University commons for students living on the campus.

The Thomas Welton Stanford Art Gallery, the first building of the second quadrangle group, completed in 1917, is the gift of Thomas Welton Stanford of Australia. This building, which sets the architectural style for the new quadrangle, has the same arched arcades as

the original quadrangle, but the arched entrances, of which there are three, are higher and more elaborate in detail.

A new LIBRARY BUILDING, the central unit in the second quadrangle group, was begun in 1917 and will be completed in 1919. The ground floor will provide a reading room for books set apart for collateral reading, a department of public documents, and administrative work rooms. On the main floor will be the delivery hall, the large reference and reading rooms, a browsing room, a periodical room, the card catalogue, and the administrative rooms. On the mezzanine and top floors there will be a large study room and smaller rooms of varying sizes for seminary and special research work.

The grounds immediately about the University have been reserved in part for experimental and ornamental purposes, in part as residence sites for members of the Faculty and others who may desire to live on the University campus.

The main buildings of the MEDICAL DEPARTMENT in San Francisco occupy four fifty-vara lots bounded by Clay, Sacramento, and Webster streets. The Clinical and Laboratory Building, including Lane Hall and Lane Hospital, is a modern building in brick and stone, with a capacity of one hundred and eighty beds. The Lane Medical Library is situated on the corner of Sacramento and Webster streets, opposite the Clinical and Laboratory Building. The Library is a fireproof structure of Colusa sandstone, three and a half stories high, with steel stacks accommodating 60,000 volumes. The Stanford University Hospital, completed in 1917, is a concrete structure with a capacity of about one hundred and eighty beds.

The HOPKINS MARINE STATION is located at Pacific Grove. A new site of about five acres, at Almeja Point, has been secured, and a concrete building specially planned for the uses of the Station was erected in 1917.

CLUB-HOUSES

The STANFORD UNION is a club-house for men, first projected by Herbert C. Hoover of the class of 1895, and built by contributions from students, alumni, faculty, trustees, and friends of the University. The Union was opened in February, 1915, and is in charge of a Board of Trustees made up of two faculty members, three alumni, and two undergraduates.

The WOMEN'S CLUB-HOUSE provides a social center for the women of the University, and is similar in plan and construction to that of the Union. The club-house was opened in February, 1915

ADMISSION TO THE UNIVERSITY

CANDIDATES must be at least sixteen years of age. They must present satisfactory recommendations as to personal character and must offer approved credentials as indicated below. Application forms for candidates from other colleges and universities, and recommendation blanks for candidates from preparatory schools, may be obtained on application to the Registrar.

Special Regulations Governing Admission of Men

Candidates for admission approved by the Committee on Admission and Advanced Standing are classified in four groups, as defined below. Those placed in Groups I and II will be admitted without numerical restriction. In Groups III and IV the number of matriculants is limited to a maximum of 450 for the autumn quarter, and fifty each for the two succeeding quarters. For the present no limit (below 450) will be placed upon the summer quarter, except that if more than 50 summer matriculants in Groups III and IV re-register for the autumn quarter the 450 matriculants allotted to the autumn quarter shall be correspondingly reduced. (These regulations do not, for the present, imply any restriction upon the number to be admitted from Group III, and candidates placed in this group are practically assured of admission.) No additions to Group III will be made after August 15th, December 20th, March 15th, and June 1st, respectively, for the next succeeding quarter. Credentials of lower division candidates not placed in Group III will be canvassed immediately after the dates named; those approved by the Committee will be placed in Group IV and will be certified for admission in order of merit until the limit fixed has been reached.

Group I: Graduate Standing.—Graduates of colleges and universities of recognized standing whose credentials evidence ability and promise and who expect to become candidates for advanced degrees, or for the high school teacher's certificate, or who purpose to pursue regular advanced, professional, or research courses.

Group II: Undergraduate Standing (Upper Division).—Students from colleges and universities of recognized standing whose previous record has been thoroughly satisfactory, and who present credentials showing full satisfaction of requirements for undergraduate standing and

the completion of college courses amounting to 67 or more units (one and a half years).

Fully recommended graduates of State Normal Schools and of other normal schools of equal standing, and advanced students from the High School Junior Colleges, may also be placed in Group II.

Group III: Undergraduate Standing (Lower Division A).—

(1) *On Examination.* Candidates who have passed the regular entrance examinations of the College Entrance Examination Board in subjects aggregating fifteen units; or who have passed the comprehensive examinations in four subjects designated by the University. Permission to take the comprehensive examinations will be based upon the completion with credit of a four years' high school course or its equivalent; at least two of the examinations must be of an advanced character.

(2) *On Recommendation.* Graduates of approved preparatory schools who have attained recommending grades in subjects aggregating fifteen entrance units. In schools which do not distinguish between a passing and a recommending standard the average grade must be at least ten per cent above the lowest passing grade, and no grade shall be acceptable unless it be at least five per cent above the lowest passing grade.

Holders of New York Regents' Diplomas granted *with credit,* and candidates from China, Japan, and other foreign countries who present credentials equivalent to those named above, and whose command of written and spoken English shall be deemed adequate for purposes of college study, may also be placed in this category.

(3) *On College Credentials.* Students from colleges and universities of recognized standing whose previous record has been thoroughly satisfactory, and who present credentials showing full satisfaction of requirements for undergraduate standing and the completion of college courses amounting to less than 67 units (one and a half years).

Group IV: Undergraduate Standing (Lower Division B).—

(1) Graduates of approved preparatory schools who have obtained recommending grades in subjects aggregating at least nine units, and who are also recommended, on the basis of a general high average or decided intellectual promise, in subjects of lower passing grade sufficient to make up the required fifteen units.

(2) Men of considerable maturity, twenty-one years of age or older, who do not fulfill the requirements for regular undergraduate standing, but whose incomplete preparation has been supplemented by practical training and experience of distinct educative value. Candidates admitted

under this provision are special students and not candidates for a degree except as noted on page 79.

(3) Candidates from other colleges and universities who do not fully meet the requirements under Group III, but who nevertheless give promise of thoroughly successful work.

(4) Candidates ordinarily classified in Group III whose credentials are received after August 15th, December 20th, March 15th, and June 1st, respectively.

Special Regulations Governing Admission of Women

Limitation of Numbers.—The Founding Grant of the University, as amended May 31, 1899, directs "that the number of women attending the University as students at any one time shall at no time ever exceed five hundred."

Scholarship Standards.—The same scholarship standards apply as in the case of many (except that the provisions noted under Group IV for men do not apply in the case of women).

Application in Advance.—All women candidates for admission must make application in advance on blanks furnished by the University. (Apply to The Registrar, Stanford University, California.)

Time of Application and Renewal.—Applications may be made any length of time in advance (for numbered list candidates application more than two years in advance is necessary). Applications made *earlier than six months* before the proposed date of matriculation must be renewed sometime *within the six months* immediately preceding this proposed date (for undergraduates sometime between the following dates, for the next succeeding quarter: April 1-July 15; July 1-November 15; October 1-March 1; December 15-June 1; for graduates: April 1-September 1; July 1-December 15; October 1-March 15; December 15-June 1).

Early application is important—for undergraduates preferably three or more years in advance of the proposed date of matriculation. One renewal is sufficient provided it is made within the six months immediately preceding the proposed date of matriculation.

Admission to the University.—Approved candidates are admitted in three ways, as follows:

a. In order of application (Numbered List). Applications must have been duly made (with necessary renewal) and complete credentials placed in the hands of the Registrar by July 15th, November 15th, March 1st, and June 1st respectively, for the next succeeding quarter. (After the first lists are made up additional numbered cards will be

issued in the order in which complete credentials are received. In case two or more candidates present complete requirements at the same time the order of precedence will be determined by the original date of application.)

b. As graduate students, candidates for advanced degrees or for the teacher's certificate, or expecting to pursue regular advanced, professional, or research courses (graduate Preferred List). Applications and credentials must have been in the hands of the Registrar by September 1st, December 20th, March 1st, and June 1st respectively, for the next succeeding quarter.

c. On the basis of exceptionally high scholarship and special fitness, without regard to date of application (undergraduate Preferred List). Application (renewed if necessary) and complete credentials must have been in the hands of the Registrar by July 15th, November 15th, March 1st, and June 1st respectively, for the next succeeding quarter.

The Preferred Lists are begun and closed immediately after the dates named. All candidates on the Preferred List are assured of admission if present on the regular registration days.

Numbered and Preferred List cards will be mailed to candidates about a week after the dates mentioned above.

Transfer of Application.—Applications made for a given date may be transferred to an earlier or later date by written notice filed with the Registrar. The advantage of the original date of application is retained. (In the case of candidates receiving numbered cards for a given date, but transferring to a later date, the original *number* is not retained, a new numbered list being made up for each matriculation period.)

Women once admitted to the University will be allowed to continue without further application, so long as scholarship and conduct are satisfactorily, and provided they present themselves for registration at the beginning of each quarter on the regularly appointed day; (but special restrictions apply to registration for the summer quarter and to summer matriculants desiring to re-register for succeeding quarters). Places will not be held for women students after the regular registration day, except by permission of the Committee on Registration granted in advance.

The regular lists for the summer quarter will be made up immediately after June 1st, but it is not improbable that credentials recieved after this date will qualify for admission. Matriculation for the summer quarter, however, does not insure registration for any succeeding quarter. Summer matriculants will be considered in the same category

as other applicants, and will receive only the advantage which inheres in early application or superior credentials.

On registration day candidates on the numbered list will register according to their serial order and to the estimated number that will not exceed the 500 limit. Should this estimate prove too high the necessary cancellations will be made on the following day, beginning with the highest number. If less than 500 women shall have registered at the close of the regular registration period, others on the numbered list will be permitted to register, in their serial order, until the full number is complete.

Complete credentials comprise: for *first-year standing,* (1) formal application, (2) fifteen accepted entrance units; for *advanced standing,* (1) formal application, (2) full certified statement of college record, including entrance credits, (3) letter of honorable dismissal; for *graduate standing,* (1) formal application, (2) diploma or certificate of graduation, (3) transcript of college record.

Entrance Units

An Entrance Unit represents a year's study in any subject in a secondary school, constituting approximately one quarter of a full year's work. In assigning credit values two laboratory, drawing, or practice periods, not requiring additional study or preparation, are regarded as the equivalent of one recitation period. The length of the school year is assumed to be from thirty-six to forty weeks.

Approved Preparatory Schools

Approved Preparatory Schools are schools maintaining full four years courses of high school work and accredited (1) by The New England College Entrance Certificate Board, by The North Central Association of Colleges and Secondary Schools, by colleges and universities of recognized standing, or (2) upon inspection undertaken or authorized by the University.

The University records of first-year students will be considered as additional evidence of the standing of preparatory schools and of their good faith and success in meeting the requirements of the University, and such evidence will be made use of in determining as to the continuance of accrediting relations.

Entrance on Examination

The University holds no entrance examinations, and does not admit students with entrance deficiencies. In general, candidates are advised to remain in the preparatory school until they fulfill the requirements

for admission on recommendation; but if prepared to enter on examination, or desiring to supplement incomplete recommendation, they should take the examinations of the College Entrance Examination Board which are held simultaneously in all parts of the United States and in various foreign countries.

In 1918 the entrance examinations of the College Entrance Examination Board will be held June 17-22 (in California, at Berkeley, Los Angeles, and other places).

In June, 1918, the "Application for Examination" and the "Recommendation of the Teacher" will be made on separate forms, and the "Application for Examination" will be required a week earlier than in previous years.

Applications for examination must be addressed to the College Entrance Examination Board, 431 West 117th street, New York, N. Y. They must be made upon a blank form to be obtained from the Secretary of the Board upon request.

If the application is received sufficiently early the examination fee will be $5.00 for candidates examined in the United States and Canada and $15.00 for candidates examined outside of the United States and Canada. The fee should be remitted by postal order, express order, or draft on New York to the College Entrance Examination Board.

Applications and fees of candidates who wish to be examined outside of the United States and Canada must reach the Secretary of the Board at least six weeks in advance of the examinations, that is, on or before May 6, 1918.

Applications and fees of candidates who wish to be examined in the United States at points west of the Mississippi River or in Canada must be received at least four weeks in advance of the examinations, that is, on or before May 20, 1918.

Applications and fees of candidates who wish to be examined in the United States at points east of or on the Mississippi River must be received at least three weeks in advance of the examinations, that is, on or before May 27, 1918.

When the candidate has failed to obtain the required blank form of application for examination the usual examination fee will be accepted if the fee arrive not later than the specified date accompanied by a memorandum containing the name and address of the candidate, the examination center at which he wishes to present himself, and a list of all the subjects in which he may have occasion to take the Board's examinations.

Applications received later than the dates named will be accepted

when it is possible to arrange for the admission of the candidates concerned, but only upon the payment of $5.00 in addition to the usual fee.

A list of the places at which examinations are to be held by the Board is published about March 1st of each year. Requests that the examinations be held at particular points, to receive proper consideration, should be transmitted to the Secretary of the Board not later than February 1st.

In these examinations the University will accept a mark of 60 as the lowest passing grade.

A Definition of Requirements in the various subjects in which examinations are held is given in Document No. 88, issued by the Board. (Price 10 cents: address Secretary, College Entrance Examination Board, 431 West 117th street, New York, N. Y.)

Entrance Subjects

The standard of preparation is the four years high school course. The proper coördination of high school subjects for the individual pupil is regarded as primarily a problem for the secondary school; the University is prepared to recognize for entrance credit any subject having an established place in the secondary school curriculum, in which adequate instruction is given and which is pursued to satisfactory results.

No prescription of subjects, other than English, is made. Candidates desiring to study mathematics must obviously offer such elementary mathematics as is not taught in the University, and engineering students are expected to offer also solid geometry and trigonometry. Candidates desiring to study Latin should offer at least two entrance units in that subject. After 1918-19 elementary language courses will not be given in the University, except under approved tutors and on payment of special fees.

All first-year undergraduates (including special students, and students coming from other institutions with less than twenty units of advanced credit) will be required to satisfy the University standard in English Composition. This may be done by passing a special Matriculation Test given during matriculation week. The examination will test the candidate's ability to write exercises not only free from marked deficiencies in spelling, punctuation, sentence structure, and paragraphing, but also indicative of his ability to think consecutively on a simple subject. The subjects which are set at the time of the

examination will be drawn for the most part from the candidate's own experiences.

A student who passes this test may be exempted from Composition work in the University, or may enter Course 2 in the Department of English. A student who does not pass will be required to register in English A at once (unless, by reason of numbers, such registration is postponed to a later quarter), and remain in the course until his work is of passing grade. Some students, whose work shows exceptional promise of maturity, may be assigned to English 2 instead.

DEFINITION OF HIGH-SCHOOL SUBJECTS

The definition of high-school subjects given by the College Entrance Examination Board (Document No. 88 issued by the Board) will serve as a standard, and also for California schools, the outline prepared by the University of California. The following suggestions and explanations will indicate the attitude of the University in judging entrance credentials, but no attempt is made to enumerate all the subjects which may be properly included in the high school curriculum.

1. English.—The work in English Composition should be given at least two recitations a week throughout the entire high school course. The greater part of this time should be devoted to practice in writing, but it is recommended that some attention be also paid to instruction in the fundamental principles of formal rhetoric.

The work in English Literature should be given an average of at least three recitations a week throughout the four years of the preparatory course. It should be so conducted as to give the student not only an appreciative understanding of the books selected either for general or for more intensive study, but also a knowledge of their place in the history of English Literature, together with an ability to read aloud intelligently both prose and verse.

In the History of English Literature preparation should consist in a brief outline with a view to making clear the character and the tendencies of the more important literary epochs and associating the chief books and authors in their proper periods.

2. Mathematics.—The work in Mathematics is usually distributed as indicated by the following unit values: algebra (1 to 2), plane geometry (1), solid geometry (½), trigonometry (½). Additional work may be offered in algebra and plane analytical geometry. The solution of numerous original problems and exercises is assumed throughout the course.

3. The Sciences.—In Physics, Chemistry, Physiology, Botany, Zoology, Hygiene, and General Science a full year's work in each is expected, comprising, preferably, two recitation periods and three double laboratory periods per week. Accurate notes of the laboratory work should be kept. Any two of the biological sciences (Physiology, Botany, Zoology) may be combined into a continuous year's course. Astronomy may be offered as a half-unit course.

Students who receive entrance credit in Chemistry, and who wish to continue the subject in the University, will be admitted at once to course *b* and will be required to begin course 1.

In Physiology the text-book work should be accompanied by experiment, dissection of animals and organs, and a certain amount of study of the tissues with the microscope.

In Botany the main thing is that the work shall be of a practical nature; that the study be mainly specimens and not books. A study of the growth and development of the forms selected is of the highest importance, and should be made a prominent feature in the work. If possible, the pupil should be allowed the use of a compound microscope; but when this is not practicable, microscopic demonstrations by the instructor are indispensable.

In Hygiene the work should include adequate instruction in personal hygiene, the hygiene of occupation, and the relation of the citizen to the State in matters of sanitation and public health. Three periods per week of physical training and three periods in experimental laboratory work in Hygiene, and two recitations per week on Public Health, or an equivalent amount of work distributed over a longer period, will cover the requirements for one unit of credit.

4. History and Allied Subjects.—History should be offered in full unit courses covering respectively the following divisions: (*a*) Ancient, (*b*) Mediæval and Modern, (*c*) English, (*d*) American. Civics may be offered as a part of American History, or as an additional half-unit course. Biblical History and Literature and Economics may each be offered as a half-unit or as a unit course.

In the History subjects, in addition to the text-book preparation, the following exercises are recommended: Supplementary reading, including the use of original material where possible, notes and digests of reading; abstracts or analyses of specified chapters, both of the text-book and supplementary reading; outlines of subjects, gathering material from all available sources; map drawing from printed data or comparison of existing maps, showing movements of exploration,

migration or conquest, territorial changes, or social phenomena. Such work should be regarded as a means rather than the end of historical study, and in every instance should be adapted in character and amount to the stage of advancement of the class and of the individual pupil. As the pupil progresses in his study, more advanced work may well be required in the form of historical composition, and of note-taking in the class from talks by the teacher or reports of fellow pupils.

5-6. Spanish and French.—The elementary study of the languages, covering two years of daily recitations, should lay stress on the following points: (1) An accurate knowledge of the forms of the languages; (2) the elements of syntax; (3) the ability to turn easy English prose into French or Spanish; (4) the ability to translate ordinary French or Spanish into idiomatic English; (5) the ability to pronounce French and Spanish correctly.

The Intermediate requirements are intended to represent a third year of daily recitation. The specific demands are: (1) A thorough knowledge of modern French and Spanish syntax; (2) the ability to turn ordinary modern French and Spanish at sight into idiomatic English; (3) the ability to translate connected English prose of moderate difficulty into French or Spanish; (4) the ability to write French or Spanish from dictation; (5) some facility in speaking the languages.

The Advanced requirements will occupy a fourth year of daily recitations. At the end of this course the student should be able: (1) To read at sight any standard author not earlier than the seventeenth century; (2) to write in French or Spanish a short essay on some simple subject connected with the works read; (3) to translate correctly a passage of modern English prose; (4) to carry on a simple conversation in French or Spanish; (5) to follow a lecture in French or Spanish.

The reading in the Elementary course should cover from four hundred to six hundred duodecimo pages; in the Intermediate course a similar amount should be read of prose and verse, a portion to be in the dramatic form; and in the Advanced course the same quantity of prose and verse should be selected from standard authors not earlier than the seventeenth century, and these should be read with reference to their literary value.

The practice of writing compositions consisting in reproductions or paraphrases of the matter read should be begun in the Intermediate course and followed by short themes along similar lines in the Advanced course.

7. **German.**—Elementary German represents the work of two high-school years with daily recitations. It should give the following preparation: The ability to read understandingly easy German prose and verse at sight; an accurate knowledge of the most important elements of grammar, embracing especially inflections, word-order, and the essentials of syntax, as also the ability to appreciate the force of prefixes and suffixes; the ability to express in correct German simple ideas concerning familiar things, and to recognize German words and simple sentences when spoken. Careful attention should be given to pronunciation and accentuation.

The amount of work to be accomplished in the first year is approximately what is contained in a beginner's book such as Zinnecker's Deutsch für Anfänger, with some additional reading. The reading of the second year should be for the most part graded modern German, from 200 to 300 pages. German should be the language of the classroom, instruction in conversation, composition, and grammar being based largely on the reading text.

Intermediate German represents a third year of daily recitations, designed to extend and strengthen the pupil's personal command of the language, and his knowledge of word formation and syntax. Here again the reading matter should be, in large measure, the center of the instruction, and some attention should be paid to literary appreciation.

Advanced German represents a fourth year of daily recitations. Beside rounding out the pupil's knowledge of grammar, and increasing his facility in speaking and writing, this course should make considerable addition to his passive vocabulary and develop his literary appreciation. It would be advisable to choose most of the reading from the works of recent or contemporary writers, but some work or works of Lessing, Goethe, and Schiller should be studied intensively, while others might be assigned for outside reading and report.

8. **Latin.**—The reading required in elementary and advanced Latin (4 units), without regard to the prescription of particular authors and works, is not less *in amount* than Caesar, Gallic War, I-IV; Cicero, the orations against Catiline, for the Manilian Law, and for Archias; Virgil, Aeneid, I-VI. An equivalent amount of reading from authors other than these specified above may be substituted. The following are suggested: Caesar, Civil War; Eutropius; Nepos; Terence, Phormio; Cicero, Letters; Sallust; Virgil, Bucolics and Georgics; Ovid, Metamorphoses.

Exercises in translation at sight should begin in school with the first lessons in which Latin sentences of any length occur, and should

continue throughout the course with sufficient frequency to insure correct methods of work on the part of the student. From the outset particular attention should be given to developing the ability to take in the meaning of each word—and so, gradually, of the whole sentence —as it stands; the sentence should be read and understood in the order of the original, with full appreciation of the force of each word as it comes, so far as this can be known or inferred from that which has preceded and from the form and position of the word itself. The habit of reading in this way should be encouraged and cultivated as the best preparation for all the translating that the student has to do. No translation, however, should be a mechanical metaphrase. Nor should it be a mere loose paraphrase. The full meaning of the passage to be translated, gathered in the way described above, should finally be expressed in clear and natural English.

The school work in Latin should include much reading aloud, writing from dictation, and translation from the teacher's reading. Learning suitable passages by heart is also very useful, and should be practiced.

The work in composition should give the student a better understanding of the Latin he is reading at the time, if it is prose, and greater facility in reading. It is desirable, however, that there should be systematic and regular work in composition during the time in which poetry is read as well; for this work the prose authors already studied should be used as models.

9. Greek.—In Elementary Greek (2 units) the following requirements should be covered: Grammar, the inflections and the essential points of syntax; Xenophon's Anabasis, Books I-IV, or an equivalent; prose composition. It is expected of every pupil that he be able to read Greek aloud without stumbling.

In Advanced Greek (1 unit): Homer, Iliad, Books I-III, or an equivalent; advanced prose composition. The pupil should have a good acquaintance with the forms and syntax of Homer, and be able to scan any given passage exactly and to read it rhythmically. In the writing of Greek the pupil should have a year's training beyond that required in Elementary Greek.

10. Drawing and Applied Art.—In each of the drawing subjects (Freehand, Mechanical, and Architectural) a unit of credit represents daily double periods for a year or single periods for two years.

In Freehand Drawing approximately two-thirds of the time should be given to representation and one-third to decorative and constructive

design. *Representation* should include: Object drawing, boxes, books, bowls, vegetables, machine parts, drawn in various positions with attention to perspective facts in line and also to light and shade; plant forms, seed pods, shells, insects, animals, and simple landscape, drawn in line, in light and shade, and in color; composition, exercises in arrangement and adaptation of pictoral subjects into good composition, using both rhythmic line arrangement and harmonious color. The style of drawing should be direct, facile and effective, adapted to the thing drawn, with refinement in its proper place and vigor in its proper place. The pupil should be equally familiar with the use of pencil and charcoal or brush. *Design* should include (1) Exercises in space filling, borders and all-over patterns with use of geometric and organic forms; (2) principles of constructive and decorative design applied to simple objects, as: in printing, a title-page or program; in textiles, a stencil or embroidery design for a curtain or table-scarf; in wood, working drawings for a chair, table, clock-case, book-rack, etc.; in metal, cabinet hardware and lighting fixtures, etc. Talks supplemented by photographs of the best paintings and architecture, and talks upon taste in home furnishing and appointments, with visits to worthy examples, should supplement the course, with a view to developing an enlightened taste in art.

In Mechanical Drawing the pupil is expected to acquire neatness and accuracy in the use of drawing instruments. This course should include practice in line work, lettering, machine or architectural working drawings, and tracing. Recognition, commensurate with the length of course and the degree of proficiency attained in the use of instruments, will be given, however, to courses consisting of line work, lettering, and the construction of geometric figures.

11. Shopwork.—Two things are expected: First, a knowledge of the materials and tools used, and a thorough understanding of the principles involved in the operation performed; second, manual dexterity, as evidenced by neatness, accuracy, and dispatch in the execution of a given piece of work.

Woodworking (½ unit) demands the ability to recognize the common varieties of wood, and some knowledge of their physical properties, such as ease of working, strength, toughness, hardness, etc., is expected. The pupil should be familiar with the uses of the principal hand tools of carpentry and with their care, be able to make the ordinary kinds of joints and splices, and be familiar with the operation of the lathe, jig-, band-, and circular-saws, and planing machines.

Forge Work (½ unit) demands an elementary knowledge of the properties of wrought iron and steel, and of the proper heats at which to work them. The management of forge and fire and the nature and uses of all the ordinary blacksmithing tools should be known. The pupil should be able to execute all of the common forging processes, including the various forms of welds in iron and steel; he is also expected to understand hardening, tempering, and annealing.

Foundry Work (½ unit) demands a knowledge of the tools and processes used in the ordinary forms of green sand moulding and core work. The pupil should have had experience in the operation of the cupola and know how to charge and operate it. He should have a knowledge of the properties of cast iron, and experience in pouring cast iron as well as in moulding.

Machine Shop Work (½ to 1 unit) demands a knowledge of the tools and processes used in the working of iron, steel, and brass. The pupil should be able to execute all forms of vise-work, such as chipping, filing, scraping, fitting, and finishing. He should be familiar, through experience in operation, with the simpler forms of machine tools, such as the lathe, drilling machine, planer, shaper, and milling machine.

12-15.—In Agriculture, Horticulture, Domestic Science, Commercial subjects, and Music the outline prepared by the University of California is suggested; also, in Music, the definition given by the College Entrance Examination Board.

FEES, EXPENSES, AND AID FUNDS

Tuition and Incidental Fees

THE Tuition Fee in Medicine is $50 per quarter.

The Tuition Fee in Law is $35 per quarter (or $3 per unit for those taking less than twelve units in law).

The Incidental Fee for undergraduates is $18 per quarter for the autumn, winter, and spring quarters, and $28 for the summer quarter. Students paying this fee shall have the privileges of the gymnasia, athletic grounds, Students' Guild, and Stanford Union or Women's Club House, without further quarterly fees. In Law and Medicine ten dollars of this Incidental Fee may be applied toward the payment of the tuition fee for the quarter.

The Incidental Fee for graduate students is $3 per quarter for the autumn, winter, and spring quarters, and $13 for the summer quarter. Graduates paying this fee shall have the privileges of the Students' Guild and the Stanford Union or Women's Club House, without further quarterly fees. Graduate students who intend to make use of the gymnasia or athletic grounds shall pay in addition a special fee of $5 per quarter.

The fees for either term of the summer quarter are one-half of the corresponding fees, undergraduate and graduate, for the whole quarter.

Any student withdrawing from the University within two weeks after registration shall be entitled to a return of two-thirds of any of the above fees.

In addition to the above fees, students in laboratory courses pay for the materials which they use, and in various courses syllabus and other fees may be charged.

Laboratory fees are ordinarily returnable as follows when duly claimed in writing within two months after the date of withdrawal from the University: thus, the whole amount will be refunded when the student withdraws within one week of the beginning of a quarter, and one-half the amount if the student withdraws before the middle of a quarter; but no fees will be refunded on account of withdrawals after the middle of a quarter, nor unless claimed in writing within two months after the date of withdrawal. (This regulation is not applicable to the Department of Chemistry.)

A General Fee of $15 per quarter at the Hopkins Marine Station covers all payments to the University.

A Diploma Fee of $5 is charged all persons receiving degrees from the University.

Cost of Living

A new residence hall for women (to be called Roble Hall) is in process of construction, and will be ready for the opening of the academic year, 1918-19. A year's residence in this hall will be required of all women students entering the University for the first time (and not living at home). Applications for information or for rooms in Roble Hall should be addressed to the Dean of Women.

Rooms in Encina Hall (the dormitory for men) cost $5.50, $6, $6.50, and $7.50 per month each, with two in a room; $5.50 and $6, with three in a room. Single rooms cost $7.50, $8, and $9 per month. Requests for reservation of rooms should be made to the Clerk of Encina Hall.

Students may live outside the Halls only in places approved by the University.

In Palo Alto and College Terrace, at an average distance of a mile and a quarter from the University, rooms and board (for men) can be obtained, in private houses, at from $25 to $35 per month. A considerable number of men live in coöperative clubs, in which the cost of board and room is reduced as low as $20 per month; such rooms are lighted and heated, but usually unfurnished. Special commutation tickets are issued by the Southern Pacific Company, and students living in towns on the line of the railway, from San Francisco to San Jose, easily go to and from the University daily. There is also trolley connection with San Jose, Los Gatos, and intermediate towns.

A complete list of approved rooms and boarding places for men is printed in August. Particular inquiries may be addressed to the Information Bureau conducted by the Y. M. C. A.

The University Inn, located near the Quadrangle, has dining accommodations for about three hundred students. A restaurant is also maintained in the Stanford Union.

Books and stationery will average from eighteen to twenty-five dollars per year.

The necessary expenses of the student, exclusive of clothing and railway fares and of tuition fees in Law and Medicine, range from $125 to $200 per quarter.

The cost of living for students of Medicine in San Francisco is about the same as at Stanford University. There are numerous rooming and boarding houses near the medical buildings.

Self-Support of Students

A considerable number of students manage, in one way or another, to earn the whole or a part of their expenses while attending the University. Such opportunities occur in the line of office and laboratory assistance, personal services of numerous kinds, the management of various student enterprises, agencies for laundries, etc.

The Student Employment Bureau (for men, in charge of the Y. M. C. A.; for women, in charge of the Dean of Women) registers without charge all students who apply for employment, and supplies employers with student labor as demanded. In general, the demand and supply are nearly equal, but the attention of new students who intend to earn the whole or part of their living is called to the following result of past experiences:

1. There is a constant *over-supply* of those wishing to do teaching and clerical work. None but those having superior qualifications and experience are likely to secure employment the first quarter.

2. There is a considerable demand for efficient stenographers and typewriters; also for men and especially women who can do domestic labor of any kind; board and room rent may be earned by waiting on table, washing dishes, general housework, house cleaning, gardening, etc.

3. Students who can do any kind of domestic or manual labor *well*, and who have thoroughly good health, can earn their board by three hours' work per day, or board and room by four hours' work per day. Those who are bookbinders, printers, mechanics, or carpenters, will have a decided advantage in obtaining employment. *But no student is advised to come to the University without resources sufficient for the expenses of one quarter.*

4. The University curriculum is adapted to those who have control of their entire time for study. The student who must earn his living, therefore, should expect to take less than the usual amount of university work.

5. No student should come expecting to earn money, who can do nothing well; skill is absolutely essential, as competition is quite as severe in the college community as elsewhere.

Particular inquiries concerning opportunities for self-support should be addressed to the Secretary of the Y. M. C. A., and, for women, to the Dean of Women. Upon arrival at the University new students should report for registration and information to the Information Bureau of the Association, or, if women, to the office of the Dean of Women.

SCHOLARSHIPS AND ASSISTANTSHIPS

There are a number of student-assistant positions in the various departments, held by either undergraduates or graduates, ranging in pay from $35 to $150 each per quarter, the average being about $75 per quarter. These do not include a considerable number of minor positions in laboratories or elsewhere where mere labor without skill or special knowledge is required, nor do they include those positions where the full time of the assistant is demanded.

Each department selects and recommends for appointment its own assistants. Requests for information as to pay and duties and applications for appointment should be addressed to the Executive Head of the department in which a position is sought.

Loan Funds

The following loan funds (with the exception of the Women's Student Loan Fund) are administered by the Committee on Scholarship. In general not more than one hundred dollars may be loaned to any one student, and provision is made for repayment, without interest, not later than one year after date of graduation or withdrawal from the University. Applications should be filed with the Academic Secretary of the University.

Horace Davis Loan Fund.—The will of the late Horace Davis, charter member of the Board of Trustees, provides a fund of $10,000, the interest of which is to be used as a loan fund for students.

William Burton Barber Loan Fund.—Established by Mrs. Anna M. Barber, in memory of her son, William Burton Barber, '02, "to provide for needy and worthy students." This fund is available for men and women of the senior class who have been registered in the University for at least three quarters. $700.

Stanford Alumni Association Graduate Loan Fund.—Loans are restricted to candidates for advanced degrees, including the A.M., J.D., M.D, and Ph.D. degrees, preference being given to candidates for the Ph.D. degree. In making loans emphasis shall be placed upon character, scholarship, and intellectual promise, in addition to personal need. $245.

Stanford Alumni Association Undergraduate Loan Fund.—"For worthy undergraduates." $500.

Harker Alumnae Association Loan Fund.—Established by the Alumnae Association of Miss Harker's School, a large number of whose graduates have been Stanford students. There are no restric-

tions except that if a graduate of Miss Harker's School applies she shall be given preference, other qualifications being equal. $225.

Class of 1906 Loan Fund.—No restrictions except such as may be imposed by the Committee on Scholarship. $100.

Associated Students Undergraduate Loan Fund.—For the benefit of worthy undergraduates who are members of the Associated Students of Stanford University. $500.

Women's Student Loan Fund.—The Women's Student Loan Fund was organized by the Women's Conference and by private subscription, and is increased yearly by small sums earned by a committee of the Conference. It is available on the following conditions, for small emergency loans: (1) No interest to be charged until one year after the student leaves the University; interest then begins at six per cent, and is payable annually; (2) All loans to be paid within five years after the student leaves the University. Applications for loans from this fund should be made to the Dean of Women.

The Dickey Scholarship Fund

The Trustees of the University have received from the estate of the late W. J. Dickey, of Fresno, the sum of ten thousand dollars for the establishment of the Dickey Scholarship Fund "to aid young men from Fresno County, preferably from Fresno City, to make their way through Stanford University." The Trustees of the Dickey Estate are Mr. Bernard Faymonville, Vice-President of the Fireman's Fund Insurance Company, San Francisco; Mr. E. A. Waldron, Cashier of the First National Bank of Fresno, and Mr. M. B. Harris, of the Fresno bar. The selection and appointment of the W. J. Dickey scholars shall be made by the President upon the recommendation of the Committee on Scholarship, subject to the provision that the trustees under the will of Mr. Dickey shall be consulted and their advice taken before any appointment is made. No one shall be appointed to a Dickey Scholarship unless he shall have been a resident of the County of Fresno, and preferably of the City of Fresno, for at least two years prior to his appointment; and no scholarship shall be held or shared by one person for more than four years.

No one shall be appointed to a W. J. Dickey scholarship unless he has fulfilled all the requirements for regular standing in the University.

Other things being equal, preference shall be given, in making appointments, to first-year students.

Appointments shall be made for the college year, but may be terminated earlier at the discretion of the committee. Appointments may

be renewed at the discretion of the committee, for a total period not to exceed four years.

In making its recommendation the Faculty Committee shall keep in mind that the donor of the W. J. Dickey scholarship fund wished the benefits therefrom to be derived by persons who are financially unable to make their way through college. In addition to this fact, character, scholarship, and seriousness of purpose shall be taken into consideration in determining appointments.

The W. J. Dickey Scholarship Fund provides for two scholarships of $250 each, payable in nine monthly installments.

Application for appointment to the W. J. Dickey scholarship, with pertinent evidence and testimonials, shall be made to the President of the University, who will refer it to the appropriate committee. Candidates shall be recommended by the committee to the President, who will submit the names to the trustees of the Dickey estate, and upon their approval appointments shall be made by the President of the University.

Memorial Scholarship

The Leland Stanford Junior Scholarship, established by Mrs. Stanford, in 1900, pays the necessary expenses of its holder throughout the undergraduate course. A room in Encina Hall is especially reserved for occupancy by the holder of the scholarship.

The B. G. Higley ('99) Scholarship

Mr. B. G. Higley, of the class of 1899, has established, through the Alumni Association, an annual scholarship of one hundred and fifty dollars, "open to either a man or woman undergraduate student who is in good and regular standing in the University, to whom the money will be a real assistance."

The selection and appointment of the B. G. Higley Scholar will be made by the President upon the recommendation of the Faculty Committee on Scholarship. Appointments will be made for the college year, but may be terminated earlier on recommendation of the Committee and at the discretion of the President.

Applicants for the scholarship must have been registered in the University for at least three quarters prior to the time of application. In making appointments it will be the purpose of the University to emphasize character, scholarship, and intellectual promise, as well as personal need. The scholarship will ordinarily be payable in six equal installments, beginning October 1st. Applications should be filed with the Academic Secretary of the University.

The Mrs. McDowell Roble Club Scholarship

The sum of one hundred and fifty dollars per year has been presented to the University by Mrs. John E. McDowell for the purpose of establishing a scholarship to be granted to a member of Roble Club who has been a student in the University and a resident of Roble Hall for two years, the award being made at the close of the junior year.

The Greek Letter Sorority Scholarship

The ten Stanford Greek Letter sororities have established an annual scholarship of one hundred dollars, to be awarded to a sorority woman who has been in residence two years, at the close of her junior year. Qualifications for election shall be based on scholarship primarily, but, in addition, character and general excellence shall be considered.

Law School Scholarship

Judge George E. Crothers, of the class of 1895, has established a Law School Scholarship of the value of one hundred dollars annually.

Bertha Hyde Braly Scholarship

Mrs. J. M. Braly, of Fresno, has established an annual scholarship of two hundred and fifty dollars, in memory of her daughter, Bertha Hyde Braly, '97. The scholarship is available for a woman student who is a resident of either Fresno County or Santa Clara County.

The Alumni Jordan Scholarships

The Alumni Jordan Scholarship Fund has been founded largely by physicians who were at one time students of Stanford University. Its purpose is to pay the tuition fees of two or three medical students of high standing, with the understanding that at some future time the amount will be returned without interest. The student who once receives this scholarship loan will be entitled to its use throughout his medical course provided his work continues to be satisfactory.

Thomas Welton Stanford Fellowship in Psychic Research

From the "Psychic Fund," created by Mr. Thomas Welton Stanford, of Australia, the Trustees have established the Thomas Welton Stanford Fellowship for Research in Psychic Phenomena.

The Buckel Fellowship

In 1914 the University established, through the coöperation of the Trustees of the estate of Dr. C. Annette Buckel, a Research Fellowship for the study of backward and feeble-minded children. The annual income from the Buckel estate is $500 and this is supplemented by a

like sum appropriated by the Trustees of the University, making the total amount available for the fellowship $1,000.

The University Fellowships

In 1917 the Trustees of the University established two University Fellowships, of the value of $500 each, to be awarded annually by the Committee on Graduate Study.

Fellowship in World Politics

The Misses Mary and Helen Seabury, of New Bedford, Mass., have established for the year 1917-18, a Fellowship in World Politics of the value of $300. The purpose is to stimulate study in international understanding and liberal principles in world politics. The fellowship is attached to the Department of History, and the award is to be made by the department.

Teaching Fellowships in Chemistry

Two Teaching Fellowships in Chemistry of the value of $600 each, were established by the Board of Trustees in 1917.

Harvard Club Scholarships

The Harvard Club of San Francisco offers two scholarships, of the annual value of $350 each, to students residing in the neighborhood of San Francisco who may desire to pursue undergraduate studies in Harvard College, or postgraduate studies in Harvard University. Other things being equal, preference will be given to those desiring to pursue undergraduate studies. In awarding these scholarships the scholarly attainments of the applicants as shown by their records, their character, needs, and general development, will be considered. Applications should be made in writing not later than February 15th, to the Chairman of the Scholarship Committee of the Harvard Club of San Francisco, Mr. George S. Potter, 1827 Pacific Avenue, San Francisco, California.

Yale Alumni Association Fellowship

The Yale Alumni Association of California awards annually the sum of $300 (to which Yale University adds an amount equal to the charge for tuition) to a graduate of the University of California or of Stanford University, for the pursuit of graduate study at Yale. Applications should be addressed to the Secretary of the Yale Alumni Association, University Club, San Francisco.

The Rhodes Scholarships

Under the will of the late Cecil Rhodes two scholarships are assigned to each State and Territory in the United States. Each scholarship

has a yearly value of $1,500, and is tenable at any college in the University of Oxford for three successive academic years.

Candidates must be unmarried, must be citizens of the United States, and must be not younger than 19 nor older than 25 on October 1st of the year in which they are elected. All scholars shall have reached before going into residence, at least the end of their sophomore year at some recognized degree-granting university or college. In accordance with the wish of Mr. Rhodes, the trustees desire that "in the election of a student to a scholarship, regard shall be had to (1) his literary and scholastic attainments, (2) his fondness for and success in manly outdoor sports, such as cricket, football, and the like, (3) his qualities of manhood, truth, courage, devotion to duty, sympathy for and protection of the weak, kindliness, unselfishness, and fellowship, and (4) his exhibition during school days of moral force of character, and of instincts to lead and take an interest in his schoolmates."

Students' Guild

The Guild is a student organization which seeks to make provision for the care of all cases of serious illness among its members. This is now accomplished for non-contagious diseases, through an arrangement with the Peninsula Hospital at Palo Alto and, for medical students, with the Lane Hospital in San Francisco. For the care of contagious diseases, provision has been made by the maintenance of a Detention Hospital on the University Campus.

A uniform hospital rate of one dollar per day is charged all members of the Guild, in addition to such special charges as may be incurred for extra service.

GENERAL REGULATIONS

Registration

ON THE appointed Registration Days, in October, January, April and June, each student must obtain a certificate of registration *in person,* at the Registrar's office.

Matriculated undergraduates may register after the appointed Registration Days and during registration week, upon payment of a special fee of two dollars; during the week following the fee for late registration will be four dollars; after that the fee will be increased one dollar for each week's delay. Registration of undergraduates and specials will not be permitted later than one month after the beginning of instruction.

Study Card

At the Registrar's office the student receives a card for selection of studies for the quarter. This card, properly filled out, and approved by the major department, must be filed with the Registrar at the time of registration; but late study cards will be accepted upon payment of a special fee of two dollars. Students registering late are admitted to particular classes only by permission of the instructor concerned. All work for which University credit is desired must be duly registered.

Enrollment in Classes

A student desiring to enter any class must present his certificate of registration to the instructor for enrollment at the beginning of each quarter. Whether the student is qualified for enrollment in a particular class is a question to be decided by the instructor in charge. In general, the prerequisites for taking any given course are noted under "Courses of Instruction."

Change of Studies

A student desiring to drop a subject once taken up, or to take up a new subject after the study card has been filed, must present to the Committee on Registration a petition for such change, approved by the major department and by the instructors whose subjects are to be taken or dropped. In general, petitions so approved, if they do not give the student too many unit-hours, or too few unit-hours, and if presented within three weeks after the beginning of the quarter, are

granted without question. If presented at a later time in the quarter they will be granted only for extraordinary reasons, and, where the taking up of new subjects is involved, only on payment of a special fee of two dollars for each course; if otherwise acceptable but presented after the close of the quarter, they will be granted only on payment of a special fee of four dollars for each course. In the case of petitions to drop subjects during the last four weeks of the quarter, action will be deferred until the close of the quarter.

Change of Major Subject

Petitions to change the major subject will be granted when approved by the departments in charge of both the old and the new subjects, the student being held to all the requirements of the new major subject. (First-year students may change their major subject at the end of the first or second quarter without petition.) In general, the major subject may be changed at the end of the first year, and in some cases later, without appreciable loss of time to the student.

Amount of Work

Fifteen hours per week of recitations or lectures or an equivalent in laboratory work, constitutes an average quarter's work. In general, students may register for as few as *thirteen* or as many as *eighteen* unit-hours; but in the case of students doing outside work for self-support or otherwise, and where considerations of health are involved, special restrictions will be made upon recommendation of the medical adviser; and where conditions or failures have been incurred in the preceding quarter, not more than *fifteen* units may be registered unless by special permission of the Committee on Registration granted in advance. Permission to register for less than *thirteen* units may also be granted for special reasons; but registration for less than *ten* units will not ordinarily be accepted. Not more than eighteen units may be credited toward graduation for any quarter's work, unless, in exceptional cases, permission to register for additional units is granted in advance. Graduate students are not held to any special number of unit-hours, but registration will not ordinarily be permitted unless such students are prepared to devote at least half of their working time to University study. Petitions for irregular registration should be presented at the beginning of the quarter.

Every unit for which credit is given is understood to represent approximately, for the average student, three hours of actual work per week, through one quarter. Thus, in lecture or recitation work, for one unit of credit one hour per week may be allotted to the lecture or

recitation and two hours for preparation or subsequent reading and study on the part of the student; but if a less amount of time is allotted for preparation or subsequent reading or study, there shall be a proportionate decrease in the amount of credit. Where the time is wholly occupied with drawing, field, or laboratory work, or in the class-room work of conversation classes, three full hours per week through one quarter are expected of the student for each unit of credit; but where such work is supplemented by systematic outside reading or experiment under the direction of the instructor, such a reduction may be made in the actual drawing, field, laboratory, or class-room time as seems just to the department concerned.

Conditions and Failures

A student conditioned in any subject may arrange with the instructor concerned for such supplementary examinations or study as will make good the deficiency; but such deficiency must be removed within one year after the condition is incurred, otherwise the condition will be considered a failure. Work reported as incomplete may be made up during the first or second quarter's registration after the incomplete is incurred; but if not made up until the second quarter, the incomplete work shall be duly entered on the student's study card and shall count as part of the permitted registration for that quarter to the extent of the actual unit-hours required for making up such incomplete work as estimated by the instructors concerned. A student failing in any subject cannot receive credit for the portion in which the failure is incurred until the subject has been re-registered and taken over again in class. A condition or failure or withdrawal from class without permission of the Committee on Registration, limits the student to *fifteen* units the quarter following.

Scholarship Reports and Notices

Mid-quarter reports on scholarship shall be obtained from all instructors, and students reported as doing unsatisfactory work shall be notified of their deficiencies.

At the close of each quarter each department shall send to the Committee on Scholarship, on blanks to be furnished by the Registrar, a list of such students as, in its opinion, may not profitably continue as major students in the department, together with information as to the reasons for such opinion, causes of unsuccess, qualifications for possible success in other lines of study, etc. (The Committee on Scholarship may require the withdrawal of such students from the University, or

may permit re-registration in some other major subject, with the consent of the department concerned.)

At the middle and at the end of the quarter each department shall be notified of all serious deficiencies in scholarship affecting students whose major work is in that department.

When a student is seriously delinquent in scholarship, the fact shall be communicated to his parent or guardian.

Probation, Failures, and Withdrawal

A student whose work is unsatisfactory may be placed on probation at any time.

A student on probation shall not take part in any intercollegiate contest, nor represent the University in any way, whether individually or in connection with any athletic, literary, musical, dramatic, or other organization.

A student who receives passing grades in less than half the work for which he is registered during his first quarter, or in less than two-thirds during any subsequent quarter, shall be deemed to have failed in his studies.

After a first failure, unless unusually serious, a student may, with the approval of the major department, again register in the University, but shall be placed on probation for one quarter.

A second failure shall result in withdrawal from the University.

A student whose delinquency is unusually serious, or is the result of persistent neglect, may be required to withdraw from the University at any time.

The Committee on Scholarship is authorized, after consultation with the major department concerned, to require withdrawal from the University, without regard to the number of units passed, of any student whose record indicates consistently poor scholarship.

Work Reported Incomplete

Work marked 'incomplete' shall be considered of passing grade only when reported as satisfactory in quality and not seriously deficient in quantity.

Leave of Absence in Case of Delinquent Scholarship

Leave of absence will not generally be granted to a student on probation, nor to any student whose work during the current quarter is unsatisfactory, unless applied for at least four weeks before the end of the quarter.

From Special to Regular Standing

Special students may be entered in regular standing and become candidates for graduation, on passing examinations in the required number of entrance subjects, provided such examinations are passed not later than two years after matriculation. In place of entrance examinations, university work to the amount of seven units for each entrance deficiency may be offered in university subjects which are also included in the entrance group. (Entrance examinations are given by the College Entrance Examination Board in June of each year.)

A special student who has completed two hundred and twenty-five units of university work, including all major requirements, and whose general university record is deemed proof of superior scholarship, may become a candidate for graduation on approval of the Committee on Admission and Advanced Standing. Petitions to this end will not be considered by the Committee until after the student has completed one hundred and eighty units of university work.

University Credit for Extra Entrance Subjects

Credit toward graduation may be given for entrance subjects in excess of the number required for admission, provided such extra entrance subjects are also university subjects, and are successfully continued in the University within two years after matriculation, and provided the student's general University record is deemed proof of superior scholarship. In general, four units of advanced credit will be granted for each extra entrance unit representing elementary work in a given subject, and seven units of advanced credit for each extra entrance unit representing advanced work. Application for such university credit must be made within two years after matriculation. After matriculation additional entrance units may be offered only for the purpose of making up entrance deficiencies.

University Credit for Special Courses

Matriculated students on leave of absence may take work in other universities, usually without any restrictions other than those imposed by the institution in question. But work undertaken in any Summer Session may be subject to special regulations, and must be approved by the major department and by the department in which work is to be taken.

Work of a special character taken outside of regularly scheduled classes, *in absentia* or during summer vacations, may be credited under the following conditions: (1) The work must be acceptable as part

of the major requirements for the A. B. degree in the department by which it is authorized, must be authorized by the department faculty concerned, as well as by the instructor under whom it is to be carried on, must be given adequate supervision and direction and subjected to the same tests as in the case of regularly scheduled courses, and must be duly registered with the approval of the Committee on Admission and Advanced Standing; if not registered in advance, a fee of two dollars will be charged for late registration; (2) such work may not be offered to cover deficiencies due to poor scholarship; (3) a fee to the University of two dollars per semester unit must be paid before credit is entered.

The last quarter's work of every candidate for a degree must be taken in this University; but in special cases, students who have obtained at least one hundred and thirty-five units in resident work and who have completed all major department requirements may be exempted from this regulation and permitted to register for special courses under the provisions noted above.

Advanced Standing

Students from institutions of equivalent rank, who maintain a satisfactory record after admission, may expect to receive the same standing as at the former institution, except that no such student can be given more than three years' advanced credit (one hundred and thirty-five unit-hours toward graduation), and that differences in standard of entrance preparation will be taken account of. Every candidate must present a full certified transcript of his college record, including entrance credit, and a letter of honorable dismissal.

Recommended graduates of approved State Normal Schools where the normal training has been preceded by a full four years' high school course, or where high school and normal school course together cover six years' work, may ordinarily be granted an advanced credit of forty-five units; in cases of superior scholarship this may be increased to sixty-seven units.

Advanced standing for work done before matriculation will generally be given only when certified as having been completed in some institution of recognized collegiate rank, except as provided above for extra entrance units, or, in particular cases, to recommended graduates of approved State Normal Schools. But in special cases permission may be given by the Faculty to receive credit on examination for work equivalent to regular University courses. Application for such examinations, with satisfactory evidence of the work accomplished, must be

presented to the Committee on Advanced Standing. Applications for advanced standing on the basis of work done before entering the University must be made within two years after matriculation.

Graduate Standing

Admission to technical graduate standing does not imply admission to candidacy for an advanced degree (for the conditions of such candidacy see p. 85). If graduates of other universities desire to become candidates for the baccalaureate degree, the question of units required for graduation may be waived, upon approval of the Committee on Admission and Advanced Standing, and the degree conferred on the satisfactory completion of not less than forty-five units of university work and the fulfillment of all major and minor requirements. Graduate students not candidates for any degree, may be permitted, upon the approval of the major department, to undertake such work as their previous training seems to warrant.

Leave of Absence

A student desiring to leave the University for a brief time should apply to the Committee on Registration. If leave of absence is desired on account of sickness, the petition must be indorsed by the medical adviser. A leave of absence is merely a justification of the absence and not a relief from the work that has been missed. A leave of absence is usually necessary only in case of interrupted work; a student in good standing absent one or more quarters may re-enter at the beginning of any quarter without formal petition.

Honorable Dismissal

An honorable dismissal means that the student is permitted voluntarily to withdraw from the University and is commended to the favorable consideration of any institution he may wish to enter. An honorable dismissal may be granted upon written application to any student not under discipline for misconduct.

Conduct of Students

In the government of the University the largest liberty consistent with good work and good order is allowed. Students are expected to show both within and without the University such respect for order, morality, personal honor, and the rights of others as is demanded of good citizens. Failure to do this will be sufficient cause for removal from the University.

In 1908 the Board of Trustees of the University provided that in all

future rentals or leases of houses as fraternity chapter houses it shall be expressly stipulated that no intoxicating liquors of whatever kind shall ever be sold or used on the premises. The Trustees also by formal resolution requested the Academic Council to prohibit the use of liquor in fraternity chapter houses, student club houses, and other student lodgings.

This action of the Board of Trustees is in harmony with the instructions given by the Academic Council to its Committee on Student Affairs, and defines the policy of the University. Prohibition of the use of liquor extends to all student lodgings whether on the campus or elsewhere. The University assumes that the act of registering as a student implies full acceptance of this policy.

Student Control

In 1911-12 the Faculty Committee on Student Affairs entered into an agreement with the University Conferences by which responsibility for the government of the students and for maintaining University standards was assumed by the men and women of the University. The general regulations of the University, standards of conduct, responsibilities, duties, and particular enactments of the Conferences are given in the "Manual of Student Control" printed by the Conferences.

University Health Control

The University exercises an advisory control over student health affairs through the Committee on Public Health.

Every student upon entering the University is required to report for a brief examination. General health and evidence of effective vaccination are the important factors in the examination. Any condition which may place a limitation on the amount or kind of work planned by the student may be discussed with him or made the subject of a report to his major department or to the Committee on Registration.

Students intending to train for any of the athletic teams, or to register for gymnasium work, are required to pass a careful physical examination at the beginning of each quarter.

A careful inspection of all boarding and rooming houses in the community is carried on under the supervision of the Public Health Committee, and only those are permitted to register who arrange to live in houses which have been approved.

VACCINATION

Within three weeks after the day of registration every student must file with the Committee on Public Health a certificate, signed by the

vaccinator, who must be a duly licensed and practicing physician, giving exact dates of vaccination, and showing either successful vaccination within seven years, or unsuccessful vaccination twice within the past twelve months.

Non-compliance with these requirements will result in a fine of two dollars after three weeks, and an additional fine of four dollars after five weeks, and cancellation of registration after seven weeks from the day of registration.

All certificates should be filed in person at the office of the Committee on Public Health. They will be returned upon request. "Conscientious objections" will not be recognized as exempting anyone. Unavoidable delay, or failure to secure a satisfactory certificate, will not exempt anyone from the fine.

"Immunity reaction" will be considered equivalent to one unsuccessful try. Only "vaccinia" will be accepted as successful vaccination.

ROOM CARDS

Every student is required to present at the Registrar's Office, at the time of registration, a properly signed room card. These cards can only be obtained from the owner or manager of the house from whom the room is rented. They are supplied to the house owner or manager by the Public Health Committee if the room meets the University requirements. Students are cautioned to obtain their room card before making a binding agreement for the rental of room.

GRADUATION

CANDIDATES may be presented for graduation in January, April, June, and October.

No degree will be conferred upon any person who has not spent at least one year in resident study at the University. No honorary degrees are given.

Bachelor of Arts

The degree of Bachelor of Arts (A. B.) is conferred upon candidates who have fulfilled the following requirements:

(1) The completion of one hundred and eighty (quarter) units of university work.

(2) The acquirement of as many grade points as there are units registered for on the candidate's record card. A unit of credit passed with a grade of 'A' counts three grade points; with a grade of 'B,' two grade points; with a grade of 'C,' one grade point; with a grade of 'D,' no grade points. A 'condition' removed does not count grade points, no matter what the final grade may be.

(3) The completion of the major subject requirements as prescribed by the Major Department.

The recommendation of the Major Department is necessary to graduation.

Forty-five units constitute a normal year's work (see p. 76), but the ordinary class divisions (freshman, sophomore, junior, senior) are not recognized by the University. The degree is conferred whenever the requirements are met, without regard to the time spent, except that at least forty-five units (including, except in special cases, the last fifteen) must be completed in this University.

Each student selects as a Major Subject the work of some one Department. The Major Department has the authority to prescribe not more than sixty units in the Major Subject (exclusive of elementary courses in the Major Department which may be offered for entrance). The Major Department shall also recommend such other courses as it may consider desirable, and shall exercise an advisory supervision over the student's entire curriculum from quarter to quarter. Major Department supervision of the student's study lists shall be administered in the spirit of the major subject system, which is to provide the

inexperienced student with necessary advice and direction while developing his power of initiative, and to accord to the mature student larger and larger responsibility in planning his own curriculum. It shall be considered a general principle of University policy, to be departed from only in exceptional cases, that at least ninety of the one hundred and eighty units required for the degree be taken outside of the Major Department.

In applied science the Major Department may prescribe so much of the entire one hundred and eighty units as it shall deem essential to the technical or professional requirements of the major subject.

A course in English Composition (English A) is prescribed for first-year undergraduates who do not satisfy the matriculation test.

Within these limitations the work in all departments is elective, and the student may freely choose any course which his previous studies have prepared him to undertake.

(A student in regular undergraduate standing who does not intend to become a candidate for the A. B. degree, may choose, with the approval of the major department, any courses in the University which his previous training has prepared him to undertake.)

Bachelor of Laws

The degree of Bachelor of Laws (LL. B.) is conferred upon candidates who have satisfactorily completed two years (ninety units) of non-professional study in the pre-legal curriculum and three years of professional study in the law school.

Candidacy for Advanced Degrees

Candidates for advanced degrees must be registered in the University and must file with the Registrar an application for candidacy. In the case of candidates for the degree of Master of Arts or Engineer this application must be accompanied by a programme of study, approved by the department faculty concerned. The approval of this programme of study by the Committee on Graduate Study is necessary for admission to candidacy for the degree. Only under exceptional circumstances will a programme of work be approved by the Committee which is received later than the beginning of the second quarter preceding the one in which the degree is to be taken. It is advisable that such programme be filed as early as possible in the student's course. Candidates for the degree of Doctor of Philosophy, to gain admission to candidacy, must file in the same manner their programme of study, and obtain the approval of the programme by the Committee on Gradu-

ate Study; they must also obtain the final approval of the Committee as set forth below in Section 5 of the conditions governing the granting of that degree. Advanced degrees will be conferred only upon the recommendation of the Committee on Graduate Study.

The Committee on Graduate Study interprets the requirement that statements of candidacy must be filed 'at the beginning of the quarter,' as meaning 'within the first six weeks of the academic year.' In no case will the degree of Master of Arts be conferred in less than three quarters after formal admission to candidacy. Statements once submitted must be kept on file and cannot be withdrawn even after substitutes have been filed and accepted. Candidates for the degrees of Juris Doctor and Doctor of Medicine are exempt from the requirement that a programme of study shall be filed a definite time in advance.

Master of Arts

The degree of Master of Arts (A. M.) is conferred on graduates of this University, and on others who have had an equivalent training elsewhere, upon the satisfactory completion in residence, of one year of work beyond the baccalaureate requirements of the department in which the degree is sought, and upon the presentation of an approved thesis, and the passing of such general or final examination as the major department may require. A longer period of residence will be required of candidates who are inadequately prepared or who devote less than the normal amount of time to their graduate course. Work may be done in connection with the regular courses of instruction or, as research, independently of them. The programme of study must form a consistent plan of work pursued with some definite aim whether it lies wholly in a single department or field of study, or in more than one. At least two-thirds of a year's work must be devoted to advanced or graduate work in the major study or in intimately allied subjects.

A candidate for the degree of Master of Arts must display ability to do independent work.

A report upon the character of the work done shall be made by each instructor under whom a candidate is registered.

The Master's thesis, bearing the approval of the instructor under whose supervision it was prepared, must be submitted to the Committee on Graduate Study by the date on which instruction closes for the quarter in which the degree is taken; upon acceptance, it shall be suitably bound and placed in the University Library.

The Committee on Graduate Study requires that the original, not a carbon copy, of the Master's thesis, written on paper of standard size

and weight, be submitted and filed. The title-page shall be of the form prescribed by the Committee.

Engineer

In the Department of Applied Science the professional degree of Engineer is conferred on graduates of this University, and on others who have had an equivalent training elsewhere, upon the satisfactory completion, in residence, of one year of professional study beyond the baccalaureate requirements of the department in which the degree is sought, and upon the presentation of an approved thesis, showing ability to do independent work. Upon the recommendation of the Department, and in order to permit the carrying on of advanced work with equipment or under conditions not available at the University, the requirement of residence may in part be waived.

The special regulations stated above for the degree of Master of Arts apply also to the degree of Engineer.

Juris Doctor

The degree of Juris Doctor (J. D.) is conferred on students who have previously received the academic degree of Bachelor of Arts, or an equivalent degree elsewhere, upon the completion of the three years' professional law course. The first year of the professional law course may be taken by candidates for the A. B. degree.

Doctor of Medicine

The degree of Doctor of Medicine (M. D.) is conferred on students who complete the five years' course in Medicine (which includes the interne year), based upon the three years' pre-medical course as laid down by the University.

Doctor of Philosophy

The degree of Doctor of Philosophy (Ph. D.) is conferred on graduates of this University, and on others who have had an equivalent training elsewhere, upon the satisfactory completion of at least three years of graduate work, beyond the baccalaureate requirements of the department in which the degree is sought, under the following conditions:

1. At least the last year of study must be spent in residence at this University.

2. At least one year prior to the date when the degree is sought, the candidate must show a reading knowledge of French and German in his special literature. The faculty of the department in which the major work is taken determines whether this requirement has been met.

3. The programme of study must include one major subject and one or two minors. The minor subject or subjects shall represent approximately one-third of the program of study; except that such minor subjects may be waived upon the recommendation of the major subject department, if approved by the Committee on Graduate Study, when the breadth and extent of the candidate's training appear to the Committee to justify such a course.

4. The candidate must present a thesis at least six weeks before the close of the quarter in which the degree is sought, in form and content acceptable to his department and to the Committee on Graduate Study. Before the degree is conferred he must either (*a*) deposit one hundred printed copies of the thesis in the University Library, or (*b*) deposit an original typewritten copy of the thesis with the librarian, and at the same time either deposit the sum of $50 or file an acceptable surety bond in the sum of $100 with the Treasurer of the University, as a guarantee that the thesis will be printed and the required number of copies deposited within two years of the date of receiving his degree.

In case the candidate can present evidence that his thesis, or an acceptable portion of it, has been accepted for publication by a reputable scientific journal or in the proceedings of a learned society, and that publication within two years has been assured, the degree may be conferred after he has deposited, together with the typewritten copy of the thesis, a sufficient sum to cover the cost of one hundred off-prints from the journal or volume in question.

If one hundred copies of the thesis are deposited within the requisite period of two years, the candidate's deposit or bond will be returned to him; if not, the Committee on Graduate Study may use the sum forfeited for the printing, by the University, of the thesis or of such portion as is deemed best.

When the thesis is of unusual length, and at the same time is of such a character that a representative portion, of independent value, can be excerpted, printed copies of this portion may be deposited with the librarian, in place of the whole, with the approval of the department concerned and the Committee on Graduate Study. In such cases the printed portion must amount to not less than twenty-four octavo pages, and must be accompanied by a statement indicating the nature of the entire thesis.

5. Final approval of candidacy must be obtained from the Committee on Graduate Study, not later than the close of the second quarter preceding the one in which it is proposed to take the oral examination. This approval will be based on the report of a Special Committee of

seven members of the Faculty to be appointed by the Chairman of the Committee on Graduate Study, of whom one member shall be chosen from each department represented by the major and minor subjects of the candidate, and the other members (one of whom shall be designated as chairman) from the faculties of other departments. This special committee shall be appointed at the beginning of the last year of candidacy and shall consider and report (*a*) whether the candidate has pursued in a satisfactory manner the programme of study upon which the provisional approval of candidacy was obtained, as evidenced by the record of his studies and by such written work as he may wish to present for inspection; (*b*) whether the preliminary draft of his thesis, or such portion of it as may be deemed representative, gives promise of being completed satisfactorily as provided above; and (*c*) whether he is eligible, in respect of comprehensive grasp of his major and minor subjects, to be admitted to the final oral examination. The report will be based in part on a conference with the candidate ordinarily of not more than one hour's duration. The major and minor departments should also certify to the Special Committee the results of such comprehensive written examinations as can be conveniently set before the time of final approval of candidacy.

6. In addition to satisfying the requirements of major and minor departments, the candidate must pass a final oral examination by an examining committee of the faculty, conducted in the presence of such other members of the faculty as care to attend. This examining committee will consist of (1) the chairman of the Committee on Graduate Study, presiding; (2) the professors of the major subject department; (3) the professor or professors in charge of the minor subject or subjects; (4) two members of the Committee on Graduate Study whose departments lie nearest that of the major professor. The Committee may at its discretion invite other members of the faculty to participate in the oral examination.

Advanced Degrees in the Medical Department

The Divisions of the Medical Department are considered as equivalent to other departments of the University in respect to candidacy and requirements for the degrees of Master of Arts and Doctor of Philosophy, and all the foregoing regulations apply to these divisions and division faculties as to departments and department faculties, with the following modifications and limitations:

1. Candidates for these degrees must have received the degree of A. B. at Stanford, or an equivalent degree elsewhere, and must have

completed all requirements for admission to the Department of Medicine, and such other requirements as each division faculty may prescribe.

2. Time spent in candidacy for the degree of Master of Arts or Doctor of Philosophy will not be counted toward the degree of Doctor of Medicine.

3. Candidates for these degrees in the divisions of Medicine, Surgery, and Obstetrics and Gynecology, must have received the degree of Doctor of Medicine.

The High School Teacher's Certificate

High school certificates may be issued by County, and City and County Boards of Education under the provisions of Section 1519, subdivision 5 (*a*), Section 1775, subdivision 1 (*a*), and Section 1792 of the Political Code of California, to recommended candidates who meet all the requirements under any one of the groups outlined below.

In addition to the technical requirements prescribed by the State Board of Education the School of Education requires, preliminary to recommendation, the completion of enough work (and of sufficiently high grade), in at least two subjects, to warrant recommendation that the candidate is fitted to teach such subjects in high school classes.

GROUP I: STANDARD GROUP

1. A Bachelor's degree from an institution requiring eight years of high school and college work.

2. One year (thirty-nine quarter units) of graduate study (which shall include one full-year course of advanced or graduate work (6 units) in at least one subject in which recommendation is sought) in an institution approved by the State Board of Education.

3. Twenty-three quarter units in Education, including the following courses: (*a*) a course in School and Classroom Management (2 units); (*b*) work in actual practice of teaching, with conferences (6 units); (*c*) a Teacher's Course in at least one subject in which the candidate expects to be recommended for certification, if such course be given in the institution and be accepted or listed under the work in education (4½ units maximum for all such courses); (*d*) a course in Secondary Education, presenting particularly the purpose and attainable goals of high school work (3 units); (*e*) such other courses relating to the theory, function, and administration of public education, as are needed to complete the required twenty-three units.

Candidates who have taught or been engaged in school supervision for not less than twenty months in this or any other State, and who present credentials showing that they have done so with reasonable

success, may be excused from six of the twenty-three units of education represented by the practice teaching, and may also be allowed to substitute other work in education for the course in School and Classroom Management.

GROUP II: NORMAL-GRADUATE GROUP

1. A Bachelor's degree from an institution requiring eight years of high school and college work.

2. Two quarters (26 quarter units) of graduate study (which shall include 4 units of advanced or graduate work in at least one subject in which recommendation is sought) in an institution approved by the State Board of Education.

3. Graduation from an approved normal school.

4. Eight quarter units in Education, including (*a*) Secondary Education (3 units); (*b*) a Teacher's Course in at least one subject in which the candidate expects to be recommended for certification, if such course be given in the institution and be accepted by or listed under the work in Education (4½ units, maximum for all such courses).

GROUP III: EXPERIENCED-TEACHERS' GROUP

1. A Bachelor's degree from an institution requiring eight years of high school and college work.

2. Two quarters (26 quarter units) of graduate study (which shall include 3 units of advanced or graduate work in at least one subject in which recommendation is sought) in an institution approved by the State Board of Education.

3. Twenty months' experience in schools of elementary or secondary grade.

4. Such number of satisfactory units in Education, including (*a*) Secondary Education (3 units); (*b*) a Teachers' Course in at least one subject in which the candidate expects to be recommended for certification, as may be determined after consideration of the individual case, such course to be given in the institution and be accepted by or listed under the work in Education (5 units, maximum for all such courses).

GROUP IV: SPECIAL NORMAL-COURSE GROUP

1. A Bachelor's degree from an institution requiring eight years of high school and college work.

2. Two quarters (26 quarter units) of graduate study (which shall include 4 units of advanced or graduate work in at least one subject in which recommendation is sought) in an institution approved by the State Board of Education.

3. Eight quarter units in Education, including (*a*) Secondary Education (3 units); (*b*) a Teachers' Course in at least one subject in which the candidate expects to be recommended for certification, if such course be given in the institution and be accepted by or listed under the work in Education (4½ units, maximum for all such courses).

4. One half-year (preceding or following the two quarters of work in an approved graduate school) in any California State Normal School which offers a special half year (or two terms) of full time instruction, especially selected for college graduates preparing for high school certification in California, and approved by the State Board of Education.

Preliminary Secondary School Certificate

A Preliminary Secondary School Certificate, authorizing the holder to do cadet teaching, without salary, in any secondary school of the county, may be granted to graduate students of any university accredited by the State Board of Education, who present a recommendation from the university that such certificate be granted.

Special Certificate

A Special Certificate of Secondary grade, authorizing the holder to teach only such branch or branches and in such grades as are named in such certificate (manual and fine arts, technical arts, household arts, commercial subjects, physical culture, music) may be granted as follows:

To recommended candidates who have had at least four years' instruction beyond that required for graduation from a high school maintaining a four-year course in advance of the eighth grade (or who have had an equivalent amount of training); provided that at least one-half of this four years' instruction must have been devoted to study or work in the special subject or subjects in which application for certification is made and in such subjects as are strictly supplementary thereto, as arranged and approved by the School of Education of this institution; *provided* also that two-fifths of a year of the time required to be given to the special subject or subjects (18 quarter units) must have been devoted to the study of the pedagogical subjects suited to the training of an elementary [or secondary] school teacher; at least one-third of which time must have been devoted to practice teaching, including methods of instruction in the special subject or subjects, under competent supervision.

Time devoted in the secondary school period to study or work in the special subject or subjects in which the candidate desires certification may be substituted at the rate of half-time for similar studies or work in the collegiate period. Such substitution shall not exceed one-half of the total time required in the special subject or subjects. One year's successful experience in teaching may be substituted for half of the required pedagogical work, and two year's teaching experience may be substituted for the entire pedagogical requirement; but all such substitutions are subject to determination by the School of Education in individual cases.

Preliminary Special Certificate

A Preliminary Special Certificate, authorizing the holder to do cadet teaching, without salary, in the special branch named in the certificate, in any elementary or secondary school in the county, may be granted to students enrolled in any vocational teachers' training course established under the laws of California who present a recommendation from the principal of the school maintaining such course that such certificate be granted.

Permits to Teach in Intermediate School Courses

Holders of elementary school certificates who have completed two years of work in a college, or one year of work in a college in addition to a normal school course, may teach in the third year of any intermediate school course, provided they comply with the following regulations established by the State Board of Education in accordance with subdivision 3b of Section 1771 of the Political Code:

Candidates who are not Graduates of Normal Schools shall present to the County Board of Education a valid certificate of elementary grade issued by a County, or City and County Board of Education in California, and a written statement attested by a college or university listed as such in the latest report of the United States Bureau of Education, that the candidate has completed at least ninety quarter units in regular college courses in such institution, including at least fifteen units of pedagogy, and at least forty-five units in any three of the following departments: English, French, German, Spanish, Latin, History, Mathematics, Physical Science, Biological Science.

Candidates who are Graduates of Normal Schools shall present a diploma of graduation from a California State Normal School or a normal school accredited by the State Board of Education for the elementary certificate, and a written statement attested by a college or university listed as such in the latest report of the United States Bu-

reau of Education, that the candidate has completed at least forty-five quarter units, of which thirty units shall be in regular college courses in such institution, in any two of the following departments: French, English, German, Spanish, Latin, History, Mathematics, Physical Science, Biological Science.

Appointment Office

The University has established in the President's Office an Appointment Office, the duties of which are to assist students and graduates of the University to obtain permanent employment and promotions, either in the teaching profession or in any other line of work for which they have prepared themselves. The Office is in charge of a Secretary who aims to secure and keep on file a complete record of the scholarship, experience, and personal qualifications of each candidate for a position. These records are confidential and intended only for the use of school officers, or of professional or business men who have positions to be filled. Copies of these records will be mailed to such officials, at their request, or at the request of the candidate concerned. Whenever notices of vacancies are received, the Appointment Secretary will recommend the best available person for a given position. Candidates for positions, when asking that copies of their recommendations be mailed, should inform the Appointment Secretary definitely as to the subjects to be taught, or the work to be done, and the time when work is to begin. The University reserves the right of refusing to extend its coöperation to students who apply for positions for which they are manifestly unfit.

The Appointment Office will be glad to be informed promptly of present or prospective vacancies in positions for which college-trained men or women are eligible.

Blanks for registration may be obtained of the Appointment Secretary. Registration must be renewed yearly, preferably during February or March.

The only charge in connection with this service is the cost of typing and mailing credentials.

Communications should be addressed to the Appointment Secretary, Stanford University, California.

COURSES OF INSTRUCTION

1917-18

[The asterisk (*) indicates that the course is repeated for the quarter named; otherwise courses announced for more than one quarter are continuous.]

ANATOMY

†Arthur William Meyer, Frank Mace McFarland, Professors.
Clara S. Stoltenberg, Associate Professor.
Edgar Davidson Congdon, Assistant Professor.

Required Courses

1. General Histology and Microscopic Anatomy.—A course dealing with the elementary structure and vital activities of the animal cell, the histology and development of the tissues and their combination into the organs of the Vertebrates, with especial reference to the Mammalia. Elementary histological technique is taught during the course. Open to students who have had a year's biological training, or its equivalent. (Three lectures and fifteen laboratory hours per week.)

8 units, autumn and *spring quarters (McFarland)
(autumn) Lec. MWF 9, Lab. MWF 10-12, TTh 9-12, W 1:05-4:05; (spring) Lec. MWF 11, Lab. MTWThF 1:05-4:05

2. Osteology.—Students will be expected to familiarize themselves thoroughly, on their own initiative, with the surface anatomy of the bones of the skeleton. This individual work will be supplemented by the laboratory study of special aspects of the subject under the supervision of instructors. Not given as a separate course. Credit is included in the courses in dissection of which osteology forms a part.

(Stoltenberg) (winter) F 9-12; (spring) M 1:05-4:05

3, 4, 5, Dissection of (3) the Head, Neck, and Thorax; (4) the Upper Extremity; (5) the Abdomen and Lower Extremity.—These courses are given simultaneously throughout the year and may be begun at any time. No one will be assigned to less than one of the above parts nor will credit be given for less, save by special arrangement.

8, 3, 6 units (respectively), autumn, *winter, and *spring quarters (Congdon)
(autumn) Lab. MT 1:05-4:05, WF 9-12; (winter) Lab. MTWThF 9-12; (spring) Lab. MTWThF 1:05-4:05

†Absent on leave, 1917-18.

6. Neurology.—A study of the structure of the central nervous system of man by means of dissections and prepared slides, supplemented by dissections of the central nervous system of other mammals. Text required: Villiger's Brain and Spinal Cord.

5 units, autumn and *spring quarters (STOLTENBERG) Lec. ThFS 8; Lab. ThF 1:05-4:05

Optional and Advanced Courses

7. Cytology.—The course deals with the structure and functions of the animal cell with special reference to the reproductive processes. Lectures, laboratory work, and assigned reading. Open to those who have had courses in Histology, Embryology, and Microscopic technique.

3 to 5 units, winter quarter (McFARLAND) MTWThF afternoons

8. Special Courses.—Advanced courses in Histology, Histogenesis, Microscopic Anatomy, Cytology, or Microscopic Technique will be planned to suit the needs of individual students. Open to those who have had courses in Histology and Embryology.

2 to 5 units, winter quarter (McFARLAND) MTWThF afternoons

9. Topographical Anatomy.—The work consists of the laboratory study of frozen sections of fetal, infantile, and adult cadavers made in various planes, and of dissected and specially injected preparations, supplemented by models and atlases. It is suggested that students who can afford the time supplement courses 3, 4, and 5 by the respective portions of course 9 immediately on completing the dissection of a part. Open to students who have completed courses 2, 3, 4, and 5.

2 to 5 units, winter quarter (CONGDON) By arrangement

10. Anatomy of the Sense Organs.—Dissections mainly. Texts: Quain-Schäfer's Microscopic Anatomy, Quain's Sense Organs. (One lecture and five laboratory hours per week.)

2 units, autumn and *winter quarters (by arrangement) (STOLTENBERG) autumn quarter Lec. Lab. MT 1:05-4:05

11. Morphogenesis.—Factors influencing animal form and structure are considered. Especial attention is given to man and mammals. Lectures and assigned reading.

2 units, winter quarter (CONGDON) Lec. MW 8

12. Human Embryology.—This course will be offered as soon as adequate provision can be made. Course 12 in the Department of Zoology is a prerequisite.

13. Investigation and Special Work. The facilities of the laboratory are always at the disposal of properly qualified students or physicians

who desire to undertake the investigation of some problem in gross or microscopic anatomy or in embryology. These and special work must be arranged for individually, but may begin at any time.

Requirements for Advanced Degrees.—In addition to the requirements published in the University Register and the Announcement of the School of Medicine, students desiring to be admitted to candidacy for the degree of Master of Arts in Anatomy must have satisfactorily completed one year's work in histology and microscopic anatomy, at least one quarter of embryology, and possess a knowledge of laboratory technique adequate for the investigation to be undertaken. For admission to candidacy for the degree of Doctor of Philosophy a reading knowledge of both French and German is further required.

Deposit Fees.—A deposit of $2.50 for microscopes and of $10 to cover damage to or loss of bones, is required of all students registering in gross and in microscopic anatomy. This sum, less charges for damage or loss, is refunded at the close of the academic year, except in the case of students discontinuing work. Such may obtain the refund at the end of the quarter. Students who are not registered in medicine are charged a fee of $15 for each of courses 3, 4, and 5, and $5 for each of the other courses.

Embryology.—Development of the chick through the first three days of incubation. (Course 12 in the Department of Zoology.)

5 units, winter quarter (Price) MTWThF afternoons

APPLIED MATHEMATICS

Leander Miller Hoskins, Professor.

Halcott Cadwalader Moreno, Sidney Dean Townley, William Albert Manning, Associate Professors.

‡Ernest William Ponzer, Assistant Professor.

The courses in Applied Mathematics are planned primarily to meet the needs of students in Engineering. The aim is to make these courses practical in the sense of furnishing thorough drill on fundamental principles and much practice in their application. Emphasis is laid upon accuracy and system in the solution of numerical problems. Students whose training in arithmetical work has been deficient, or who are otherwise inadequately prepared, or who lack aptitude for mathematical study, can not pursue these courses successfully.

‡Deceased, December 20, 1917.

Students majoring in any engineering department should have entrance credit in the preparatory subjects of algebra (one and one-half units), plane and solid geometry, and plane trigonometry. This preparation is required for admission to any of the following courses except Descriptive Astronomy.

The mathematics regularly required of students in engineering consists of courses 1, 2, and 3. Each of these courses runs two quarters, 5 unit-hours per quarter, and they will regularly be taken in the order 1*a*, 1*b*, 2*a*, 2*b*, 3*a*, 3*b*; it is possible, however, to take 2*b* and 3*a* simultaneously.

A. Elementary Analysis.—Not to be given in 1918-19.

5 units, autumn quarter (PONZER) MTWThF 9

1. Elementary Analysis.—This course presupposes a familiarity with the elements of algebra and trigonometry, and is designed to strengthen the command of the student over these subjects and to give him a working knowledge of the method of co-ordinate geometry. Readiness in the application of the fundamental principles of algebra, trigonometry, and geometry to the solution of numerical problems is of fundamental importance to the engineer, and this side of the work is emphasized throughout the course.

1a. First half of course 1.

5 units, autumn and *winter quarters (PONZER, MANNING, MORENO) (autumn) MTWThF 9, 10; (winter) MTWThF 9

1b. Second half of course 1.

5 units, winter and *spring quarters (MANNING, MORENO) (winter) MTWThF 9, 10; (spring) MTWThF 9

2. Calculus.—An elementary course in Differential and Integral Calculus, in which emphasis is laid on fundamental principles and simple applications.

2a. First half of course 2.

5 units, spring and *autumn quarters (MORENO, MANNING, TOWNLEY, HOSKINS) (spring) MTWThF 9, 10; (autumn) MTWThF 8, 9

2b. Second half of course 2.

5 units, autumn and *winter quarters (MANNING, MORENO, TOWNLEY) (autumn, beginning in 1918, MTWThF 10); (winter) MTWThF 8, 9

3. Theoretical Mechanics.—An elementary course, covering the fundamental principles of Statics, Kinematics, and Kinetics, restricted mainly to coplanar forces and to plane motion of particles and of rigid bodies. An elementary treatment of Graphic Statics is included. The course is designed as preparation for the courses in Applied Mechanics

taken by students of Engineering, but is open to all whose preparation includes the equivalent of courses 1 and 2.

3a. First half of course 3.
5 units, winter quarter (HOSKINS) MTWThF 10

3b. Second half of course 3.
5 units, spring quarter (HOSKINS) MTWThF 10

4. Theoretical Mechanics.—A more advanced course, presupposing course 3 or its equivalent. (Given if there is sufficient demand.)
5 units, autumn quarter (HOSKINS) Hours to be arranged

8. Engineering Mathematics.—This course is designed to meet the needs of students in Electrical Engineering, and should be taken by those intending to take course 7 in Electrical Engineering.
5 units, autumn quarter (MORENO) MTWThF 8

9. Graduate Courses.—Advanced courses in Theoretical Mechanics, Hydromechanics, Theory of Heat, Theory of the Potential Function, Theory of Elasticity, or other subjects, may be arranged for students having the requisite mathematical training.

[Advanced Electrotechnics.—See announcement of the Department of Electrical Engineering, course 7.
4 units, winter quarter (RYAN, MORENO)

ASTRONOMY AND GEODESY

The course in Descriptive Astronomy is designed especially to meet the needs of students who have time for only a general knowledge of the subject. Course 11 is designed especially for students of Engineering and Geology who desire a working knowledge of practical astronomy. The other courses are intended for students of Mathematics or Civil Engineering who wish to prepare themselves for geodetic work.

10. Descriptive Astronomy. This course consists of a general survey of the various branches of astronomy, including a study of the celestial sphere, the bodies of the solar system, comets, the fixed stars, and other heavenly bodies. The treatment is non-mathematical.
4 units, autumn and *summer quarters (TOWNLEY) MTWF 11

11. Practical Astronomy.—The theory and practice of the determination of latitude, azimuth, time, and longitude, with sextant and engineer's transit. Intended especially to meet the requirements of students of civil engineering. Course 1, differential calculus, and surveying are prerequisites.
3 units, winter quarter (TOWNLEY) MWF 10

12. Advanced Practical Astronomy.—A continuation of course 11. Precise methods of determining time, latitude, etc., by means of the universal instrument.

Any quarter (Townley) Hours and units by arrangement

13. Adjustment of Observations.—Theory of the method of least squares, with applications. Credit in course 2 or its equivalent is a prerequisite.

3 units, winter quarter (Townley) MWF 10

14. Geodesy.—Study of the form and dimensions of the earth and the practical methods of geodetic work. Courses 11 and 13 are prerequisites.

3 units, autumn quarter (Townley)

BACTERIOLOGY AND EXPERIMENTAL PATHOLOGY

Wilfred Hamilton Manwaring, Professor.
†John Timon Connell, Herbert Lee Niebel, Instructors.

Non-Medical Course

A. The Infectious Diseases.—Non-technical lectures on the nature, economic significance, and administrative control of the important infectious diseases of man and domestic animals. Not open to medical students. Prerequisites: 90 units of University work.

2 units, spring quarter (Manwaring) [Not given in 1917-18.]

B. Elementary Bacteriology.—A non technical course, covering the entire field of Bacteriology and Immunology, designed especially for sanitary chemists, teachers, nurses, social workers, etc. Not open to medical or pre-medical students. Prerequisites: 120 units of University work, including ten units of biological science and ten units of Chemistry.

6 units, winter quarter (Niebel) [Not given in 1917-18.]

Medical Courses

1. General Bacteriology.—Required medical course. An introductory course in bacteriological technique, dealing mainly with the medically important, non-pathogenic forms. Prerequisites: 150 units of University work (120 units for department majors), including 15 units of biological science, Chemistry 10 and *f*, or equivalents.

4 units, spring quarter (Niebel, ———) Lec. Lab. TTh 8-11

1a. Elective Quiz.

1 unit (Manwaring) S 8

† Absent on leave, 1917-18.

2. Pathogenic Bacteriology.—Required medical course. Prerequisites: Zoology 11, Anatomy 1, Physiology 3, 4, Chemistry 17, *l*, and Bacteriology 1, or equivalents.

6 units, autumn quarter (MANWARING, NIEBEL) Lec. MWS 9; Lab. MTTh 9-12

2a. Elective Quiz.

1 unit (MANWARING) By arrangement

3. Elementary Serology.—Elective medical course. Continuous course extending through two quarters. The course must be preceded or accompanied by course 2.

3 units, autumn and winter or winter and spring quarters (MANWARING, ———) Lab. Th 8-12

4. General Pathology (a).—Required medical course. Continuous with course 1 in the Division of Pathology, in San Francisco. The course is given from the experimental point of view and covers: circulatory disturbances, degenerations, pigmentations, regenerations, and inflammation. Prerequisite: course 2.

6 units, winter quarter (MANWARING, ———) Lab. MWF 9-12

4a. Elective Exercises in Experimental Pathology, (a) Anatomical and Histological.—Aseptic surgical operations, the production of gross and microscopic lesions illustrative of course 4.

2 units, winter quarter (MANWARING) TTh 1-4

4b. Elective Exercises in Experimental Pathology, (b) Physiological and Chemical.

2 units, winter quarter (MANWARING) [Not given in 1917-18.]

5. Applied Bacteriology, Serology, and Experimental Pathology. - Standard methods of milk, water, food, drug and soil analysis; standardization of disinfectants; titration of curative sera; and other routine hygienic laboratory methods. Prerequisites: courses 3 and 4.

6 units, spring quarter (MANWARING) [Not given in 1917-18.]

[Clinical Bacteriology.—See Medicine 16, Dr. DICKSON.]

[Clinical Serology.—See Medicine 15, Dr OLIVER.]

[Clinical Pathology.—See Medicine 2, Dr. BARNETT.]

6. Advanced Work, Research.

Among the recommended electives are: Botany 6, 12; Chemistry *e*, *k*; Economics 23, 36; Entomology 12, 16; Zoology 12.

FEES.—Courses B and 1, $20 each; courses 2 and 5, $25 each; courses 3 and 4, $15 each; courses 3 and 4 taken together in the same quarter, $25. Students pay for breakage and animals used.

Major Requirements.—A reading knowledge of German (or French), Physics 7, Zoology 11, Anatomy 1 (including histological technique), Physiology 3, 4, Chemistry 10, 17, *d, f, l,* Bacteriology 1 2, 3, 4, 5, and 6 (5 units), or equivalents. Department majors who are not planning to take the complete medical course are recommended to substitute 5 units of Clinical Bacteriology, Clinical Serology, or Clinical Pathology, for course 6. The following is the recommended curriculum.

First Year: Physics 7; Chemistry 1, 3, *b, d,* (2,*a*); German 1, 2, 3.

Second Year: Chemistry *f,* 10; Botany 1; Zoology 1, 11; German 25, 26, 27.

Third Year: Chemistry 17, *l*; Anatomy 1; Physiology 3, 4; Bacteriology 1.

Fourth Year: Bacteriology 2, 3, 4, 5, 6 (or equivalent).

BIBLICAL HISTORY AND LITERATURE

David Charles Gardner, Chaplain, Lecturer.
Augustus Taber Murray (Department of Greek), Raymond Macdonald Alden (Department of English).

1. Life and Teaching of Christ.—A history of the life and times of Jesus, with a study of the four Gospels, an analysis of the Ethics of Jesus, and the application of his teaching to the life of today. Lectures, discussions, and papers.

1 unit, autumn, winter, and spring quarters (Gardner) Th 1:05

English Bible.—Representative portions of the Bible studied as literature, with some consideration of the history and the prose style of the English versions. Not open to first-year students. [English 16.]

4 units, autumn quarter (Alden) MTWF 11

New Testament Literature.—A critical introduction to the literature of the New Testament for general students; no knowledge of Greek is presupposed. Lectures with assigned readings. [Greek 20.]

3 units, spring quarter (Murray) MWF 10

BOTANY

Douglas Houghton Campbell, George James Peirce, Professors.
LeRoy Abrams, Leonas Lancelot Burlingame, Associate Professors.
James Ira Wilson McMurphy, Instructor.

The Department of Botany aims to provide instruction for two classes of students: (*a*) Students who wish to know something of the structures, life processes, and relationships of plants, and to gain some familiarity with the methods of scientific work; and (*b*) Professional students who look forward to investigation, teaching, or the technical applications of Botany in Plant Breeding, Forestry, Agriculture, Horticulture, Plant Pathology, etc. Courses 1*a*, 1*b*, 1*c*, which present the elements of the more important divisions of botanical study, are designed to meet the needs of both groups of students and must precede all other courses in the department, except in the case of students who have received equivalent credit. Courses 2 to 16 are open to students who have had courses 1*a*, 1*b*, or 1*c*, or their equivalent. It is the aim of these courses to give the student, by means of lectures and references to the literature, a general and summary account of the present state of knowledge, and in the laboratory and the field to afford him an opportunity for a personal acquaintance with plants themselves. Students who have had two or more years' work may, after consultation, be registered in courses 17, 18, 19, 20, 21. The resources of the department afford exceptional opportunity for investigation in a number of fields. Properly qualified students desiring to undertake such investigation should register in courses 22, 23, 24, 25, 26, after consultation with the instructor concerned.

Major students in the department will be expected to complete 60 units in the department, and Zoology 1. The sixty units should include courses 1*a*, 1*b*, 1*c*, 2, 3, 4 or 5, 7 or 8, 9, 10 or 11, and 12 or 13. It is strongly recommended that courses 2, 3, 7, and 8 be taken in the second year.

The Teacher's Recommendation for High School Botany is based on a minimum of courses 1*a*, 1*b*, 1*c*, 2 or 3, 4 or 5, 7 or 8, 10, and 12 or 13.

Students looking to Forestry or Agriculture as a profession should include courses 4, 6, 10, 11, 12, and 13, as part of their preparation, and the following subjects in other departments: elementary physics, chemistry, geology and physiography, zoology, entomology, economics, and applied mathematics. They should also be able to read French and German.

Fees are charged in the various courses approximately sufficient to cover the cost of the perishable materials and syllabus used, as follows: Courses 1, 2, 3, 7, 8, 9, 10, 11, 15, 17, 18, 19, 20, 22-26, $3.00 each; courses 4, 5, 6, 12, 13, 14, 16, 21, $5.00 each.

1a. Elementary Botany: Morphology.—This course is designed to be a foundation course. It aims to present a comprehensive view of the entire plant kingdom from the lowest to the highest. The individual types studied will be chosen with reference to their suitability to illustrate the larger steps through which plants have passed in the course of evolution. Campbell's "A University Text Book of Botany" is used as the principal text and should be owned by, or at least be available to, every student. References to other books will be given whenever advisable and such supplementary reference books will be kept on a shelf in the laboratory and will not be permitted to be taken from the room. The hour preceding the lecture on Tuesdays and Thursdays will be spent in the laboratory in study and conference under supervision.

5 units, autumn and * summer quarters (Campbell, Burlingame, and Assistants) Conferences TTh 1:05; Lec. TTh 2:05; Lab. MWF 1:05-3:45

1b. Elementary Botany: Systematic.—Study of the fundamental principles of plant relationships, with special reference to the higher plants. The morphology of a pteridophyte, a gymosperm, and an angiosperm will precede the general structural studies of the principal orders. The laboratory work will be supplemented by field work and classification.

5 units, winter quarter (Abrams, and Assistants)
Lec. TTh 2:05; Lab. MWF 1:30-4

1c. Elementary Botany, Anatomy, and Physiology.—Study of the structure, mainly of the land plants, with a view to understanding the vital processes of living plants. The laboratory work will be supplemented by field work.

5 units, spring quarter (Peirce, Bartholomew)
Lec. TTh 2:05; Lab. MWF 1:05-3:45

2. Fresh-Water Algae.—Lectures, readings, and laboratory work on the morphology and classification of Blue-green and Green Algae. Prerequisite: Botany 1*a*.

5 units, winter quarter (Campbell) Lec. TTh 1:05; Lab. MWF 1:05-3:45

3. Marine Algae.—Lectures, reading, and laboratory work on the morphology and classification of the Brown and Red Algae. This course is a continuation of course 2, but may be taken independently. Prerequisite: Botany 1*a*.

5 units, spring quarter (Campbell) Lec. TTh 1:05; Lab. MWF 1:05-3:45

4. General Fungi.—Lectures and laboratory work on the morphology and classification of Fungi.

5 units, autumn quarter (McMurphy) Lab. MTWThF 8-10

5. Fleshy Fungi.—Lectures, laboratory, and field work on the fleshy Fungi ordinarily known as mushrooms, toadstools, etc.

5 units, winter quarter (McMURPHY) Lab. MTWThF 8-10

6. Plant Pathology.—Lectures, laboratory, and field work on fungous and other plant diseases. Open only to students who have had course 4 or its equivalent.

5 units, spring quarter (McMURPHY) Lab. MTWThF 10-12

7. Bryophytes.—Lectures and laboratory work on the special morphology and classification of the Bryophytes (Mosses). Prerequisite: Botany 1*a*. [Not given in 1917-18.]

5 units, winter quarter (CAMPBELL) Lec. TTh 1:05; Lab. MWF 1:05-3:45

8. Pteridophytes.—Lectures and laboratory work on the special morphology and classification of Pteridophytes (Ferns, Horsetails, Club-mosses). This course is a continuation of course 7. Prerequisites: 1*a* and 7. [Not given in 1917-18.]

5 units, spring quarter (CAMPBELL) Lec. TTh 1:05; Lab. MWF 1:05-3:45

9. Seed Plants.—Lectures and laboratory work on the general morphology and anatomy of Gymnosperms and Angiosperms. This course is intended to continue and round out the work of courses 2, 3, 4, 7, 8. It aims to give the student an insight into the origin and relationships of the larger groups of Seed Plants through a study of their Morphology, Embryology, and Comparative Anatomy. Prerequisite: Course 1*a*; desirable, course 8.

5 units, winter quarter (BURLINGAME) Lec. and Conf. TTh; Lab. MTWThF 10-12

10. Systematic Botany. Study of the flowering plants with special emphasis on the more complex and difficult groups. In connection with the course a botanical survey of the local flora will be undertaken, in which each student will choose a special problem. Course 1*b* is a prerequisite.

5 units, spring quarter (ABRAMS) Lec. TTh 2:05; Lab. MWF 1:30-4

11. Geographical Distribution and Forest Botany.—Study of the trees and shrubs and the principles of geographical distribution which they illustrate. The laboratory work will be supplemented by work in the field and in the Arboretum.

5 units, autumn quarter (ABRAMS) Lec. TTh 1:05; Lab. MWF 1:30-4

12. Nutrition and Respiration.—Experimental study of these two functions, supplemented by lectures and reading. Prerequisite: 1*c* or its equivalent. Knowledge of the elements of physics and chemistry is desirable.

5 units, autumn quarter (PEIRCE) Lec. TTh 1:30; Lab. MWF 1:30-4

13. **Growth, Irritability, and Reproduction.**—Experimental study supplemented by lectures and reading. Prerequisite: Course 1*c* or its equivalent. Knowledge of the elements of physics and chemistry is desirable.

5 units, winter quarter (PEIRCE) Lec. TTh 1:30; Lab. MWF 1:30-4

14. **Technique.**—Laboratory instruction in the principles and practices of killing, fixing, sectioning, staining, imbedding, etc., ordinarily used in botanical work. Students will be given an opportunity to learn photomicrography when desired. Prerequisite: Botany 1*a*.

5 units, spring quarter (BURLINGAME) Lab. MTWThF 8-10

15. **Plant Breeding.**—Lectures, demonstrations, and laboratory work illustrative of the principles and practices underlying modern practice in the propagation and improvement of plants. Prerequisite: Botany 1*a* or Zoology 1, or equivalent.

5 units, winter quarter (BURLINGAME) [Not given in 1917-18.]

16. **Cytology.**—Lectures and laboratory work on the structure and functions of plant cells. Especial attention is given to the bearing of cytological facts on heredity, plant breeding, and evolution. Prerequisites: Courses 1*a* and 14. [Not given in 1917-18.]

5 units, spring quarter (BURLINGAME) Lec. TTh; Lab. MWF 10-12

17. **Advanced Plant Pathology.**—Field and laboratory work on special diseases.

(McMURPHY) Hours and credit by arrangement

18. **Advanced Archegoniates.**—This course offers work for individual students to continue the work begun in courses 7 or 8 along lines of special interest. Prerequisites: Elementary Botany and courses 7 or 8 or equivalents.

(CAMPBELL) Hours and credit by arrangement

19. **Advanced Systematic Botany.**—Special problems in taxonomy and geographical distribution, with reference to methods of investigation. This course is intended primarily as preliminary training for research work in taxonomic botany.

(ABRAMS) By arrangement

20. **Problems in Genetics and Plant Breeding.**—This course offers an opportunity to continue advanced work along the lines of course 15.

Any quarter (BURLINGAME) By arrangement

21. **Advanced Physiology.**—Experimental study of a single problem by one or more individuals. Prerequisites: Elementary Botany and courses 12 and 13, or their equivalents.

(PEIRCE) By arrangement

22. Research in Morphology.—Students desiring to do original investigation in morphology must have adequate training in the appropriate special morphology courses or their equivalents.

(Campbell) By arrangement

23. Research in Plant Pathology.

(McMurphy) By arrangement

24. Research in Taxonomy and Geographical Distribution.

(Abrams) By arrangement

25. Research in Cytology and Genetics.—For students who wish to undertake original work in genetics or cytology. Prerequisites are an adequate training in general botany and such special courses as the nature of the work makes necessary.

Any quarter (Burlingame) By arrangement

26. Research in Physiology.

(Peirce) By arrangement

CHEMISTRY

John Maxson Stillman, Professor Emeritus.

[2]Robert Eckles Swain, Lionel Remond Lenox, Edward Curtis Franklin, Stewart Woodford Young, Professors.

John Pearce Mitchell, Associate Professor.

William Henry Sloan, Assistant Professor.

Alice Ruth Berger, William Edmund Burke, †Tenney Lombard Davis, Nathaniel Howell Furman, †Norris Folger Hall, Ernest Oertly, Instructors.

Howard McKee Elsey, Gaston Jack Levy, Norris Watson Rakestraw, Teaching Fellows.

I. Lecture Courses

1. General Inorganic Chemistry. Comprising a systematic treatment of elementary principles and of the properties of the more important elements and their compounds. Open to all students. Those not having entrance credit in Chemistry will be required to enroll in Chemistry 2, and in laboratory course *a* concurrently.

3 units, autumn and *winter quarters (Mitchell)
(autumn) MWF 8; (winter) TThS 8

2. General Inorganic Chemistry.—Recitation section supplementary

† Absent on leave, 1917-18.
2 Absent on leave, winter quarter.

to courses 1 and *a*. Required of students without entrance credit in Chemistry.

1 unit, autumn and *winter quarters (Rakestraw, Levy) T 11

3. General Inorganic Chemistry.—Continuation of Chemistry 1. Open to students who have had courses 1, 2, and *a*, or their equivalents. (Entrance credit in Chemistry is equivalent to courses 2 and *a*.)

3 units, winter and *spring quarters (Mitchell.)
(winter) MWF 8; (spring) TThS 8

4. General Inorganic Chemistry.—Combination of Chemistry 1, 2, and 3. Open to all students in the summer quarter.

6 units, summer quarter (———) MTWThFS 8

5. Principles of Inorganic Chemistry.—Discussion of the elements of chemical theories and of important generalizations in the field of inorganic chemistry. Prerequisite: Chemistry 3 or 4, or their equivalent. [To be given in summer quarter of 1918.]

4 units, autumn quarter; summer quarter in alternate years.
(Swain) MTWF 11

6. Principles of Inorganic Chemistry. Continuation of Chemistry 5. Prerequisite: Chemistry 5 or its equivalent. [Not to be given in summer quarter of 1918.]

4 units, spring quarter; summer quarter in alternate years.
(Swain) MTWF 11

7. Organic Chemistry.—Lectures and reviews on the chemistry of carbon compounds. Open to students who have completed courses 5 and 6 or their equivalent.

5 units, autumn quarter (Franklin) MTWThF 10

8. Organic Chemistry.—Continuation of Chemistry 7.

5 units, winter quarter (Franklin) MTWThF 10

9. Advanced Organic.—Advanced topics in organic chemistry, including stereochemistry. Open to students who have completed courses 5-6, and 7-8. [To be given in 1918.]

3 units, spring quarter in alternate years (Franklin) MWF 8

10. Elementary Organic Chemistry.—A condensed course in organic chemistry is offered particularly for students in medicine, but open to all who have completed course *d*. (See Department of Medicine, Division of Chemistry, course 1.) Brief course, not for Chemistry majors.

5 units, spring and *summer quarters (Oertly)
(spring) MTWThF 8; (summer) MTWThF 10

11. Chemical Calculations.—Consists of a series of problems designed to review the fundamental principles of analytical and theoretical

chemistry. Open to juniors and seniors who have had courses 5, 6, and *f*. A series of more advanced problems will be given by arrangement.

3 units, spring quarter (Mitchell) MWF 8

12. Industrial Chemistry.—Lectures on fuels, water, acid and alkali manufacturing, explosives, sugar-making and refining, petroleum. Open to students who have completed courses 5-6 and 7-8.

5 units, spring quarter (Lenox, Franklin, Swain, Mitchell) MTWThF 9

13. General Physical Chemistry.—Lectures covering as far as possible the whole field of physical chemistry. Open to students who have completed Chemistry 5, 6, 7, 8, and *f*, courses 7 or 5 in Mathematics, and courses 6, or 7, or 1 and 2 (if possible 1, 2, and 3) in Physics.

5 units, autumn quarter (Young) MTWThF 8

14. General Physical Chemistry.—Continuation of Chemistry 13.

5 units, winter quarter (Young) MTWThF 8

15. The Concepts and Laws of Chemistry.—The aim of this course is to impart a critical attitude toward the concepts and laws of chemistry, and to give thereby a greater depth and flexibility of thought concerning fundamental principles to those intending to teach the science.

2 or 3 units, summer quarter (Young) Hours by arrangement

16. Electro-Chemistry.—Discussion of the general theories and applications of electro-chemistry. Open to seniors in Chemistry, and to others who have completed courses 13 and 14 or their equivalent.

3 units, spring quarter (Burke) MWF 11

17. Physiological Chemistry.—Lectures on the chemical composition and action of the tissues and secretions of the animal body, the digestion of foods, and the elimination of waste products. Open to students who have completed courses 7 and 8, or 10.

5 units, autumn and *summer quarter (Swain) MTWThF 8

18. Seminary in Chemistry.—Discussion of assigned topics in theoretical and general chemistry. Open to graduate students, and to advanced undergraduates in Chemistry, with the approval of the Faculty in Chemistry.

1 unit, every quarter (Franklin, Young, Swain) By arrangement

II. Laboratory Courses

a. Elementary Inorganic Chemistry.—In connection with courses 1 and 2. Illustrating fundamental laws and principles of elementary

chemistry. Required of students who have not received entrance credit in Chemistry.

3 units, autumn and *winter quarters (Mitchell, Elsey, Rakestraw, Levy) MTW 1-4 or ThF 1-4 and S a.m.

b. General Inorganic Chemistry.—Inorganic preparations and general chemistry. For students with entrance credit or Chemistry *a*.

3 units, every quarter (Mitchell, Elsey, Rakestraw, Levy) MTW 1-4, or ThF 1-4 and S 9-12

c. General Inorganic Chemistry.—Combination of *a* and *b*. Open to all students in the summer quarter.

5 units, summer quarter (Hall, Levy, ———) 5 afternoons

d. Qualitative Analysis.—Open to students who have completed courses 3 or 4, and *b* or *c*.

5 units, autumn, *winter, *spring, and *summer quarters (autumn, winter, spring, Lenox, Berger; summer, Sloan) 5 afternoons

e. Organic Preparations.—Preparation of typical carbon compounds. Open in connection with courses 7 and 8 to students who have completed course *d*.

5 units, winter, *spring, and *summer quarters (Franklin, Oertly) 5 afternoons

f. Quantitative Analysis.—Introductory. Training in manipulation in gravimetric and volumetric methods. Open to students who have completed course *d*.

5 units, autumn, *winter, *spring, and *summer quarters (autumn, winter, Sloan, Furman; spring, Furman; summer, Sloan) 5 afternoons

h. Quantitative Analysis.—A continuation of course *f*, principally gravimetric methods.

5 units, autumn, *winter, and *summer quarters (Sloan, Furman) 5 afternoons

i. Advanced Quantitative Analysis. Systematic mineral analysis and volumetric assays of ores of copper, lead, zinc, iron, and manganese. Considerable option is allowed in this course to meet the needs of students interested in special lines of work or in particular industries. Open to students who have completed courses *f* and *h* and required of all students registering in division B (Analytical Chemistry).

Students majoring in other departments, who have completed course *f* in Chemistry, may register for three units work in this course, covering the volumetric portion only.

3 or 5 units, autumn and *spring quarters (Lenox, Berger) 5 afternoons

k. Physical-Chemistry Measurements. Exercises in the practice of physical-chemical laboratory methods. Open to students who have completed or are taking courses 13-14, and who have completed courses

7, 8, *e*, and *f*. In special cases and by special arrangement this course will be open to students who have completed courses 7, 8, *e*, and *f*, but have omitted courses 13-14.

5 units, every quarter (YOUNG, BURKE) 5 afternoons

1. Physiological Chemistry.—A laboratory course including a preliminary study of the proteins, carbohydrates, and fats, and the action of the various digestive fluids upon them; followed by a chemical examination of the bile, blood, milk, the chief tissues of the animal body, and the excretions. The latter half of the course is devoted to quantitative analytical methods. In connection with course 17.

5 units, autumn and *summer quarters (SWAIN, RAKESTRAW) 5 afternoons

x. Advanced and Special Courses.—Advanced and Special Courses in laboratory work and research work are open to students who have completed the necessary prerequisites, by arrangement with professors of the Department, and with reference to the particular aims and ambitions of the students. Such advanced or special subjects are, for example: special methods in mineral analysis, iron and steel analysis; special methods in assaying; water analysis; urine analysis; elementary organic analysis; special organic preparations; analysis of sugar, toxicology, etc.

Qualified students may also pursue investigations of problems in inorganic, organic, physical, analytical, or physiological chemistry under the direction of any professor with whom arrangement is made.

For all such advanced, special, or research work, students will register and enroll under *x*, giving name of the professor under whom the work is to be carried on, and for such number of units of credit as may be agreed upon.

Students intending to major in the Department of Chemistry are advised to offer entrance credit in chemistry, physics, mathematics (including solid geometry and trigonometry for the chemical engineering course), and German (2 units). Students without these entrance credits may experience some difficulty, especially in the chemical engineering course, in conforming to the Departmental requirements for graduation.

Candidates for the degree of Bachelor of Arts in Chemistry may select any one of the four following curricula (A, B, C, D), the requirement of the Department being as follows:

A. GENERAL CHEMISTRY

FIRST YEAR—Chemistry 1, 3, *b*, *d*, (2, *a*); German 1, 2, 3; Mathematics 7 or 5.

Second Year—Chemistry 5, 6, *f*; German 25, 26, 27; Physics 7.
Third and Fourth Years—Chemistry 7, 8, 13, 14, *e*, *k*, or *x*.

Recommended for all who are studying the science of chemistry for its own sake or for the profession of teaching.

B. Analytical Chemistry

First Year—Chemistry 1, 3, *b*, *d*, (2, *a*); German 1, 2, 3.
Second Year—Chemistry 5, 6. *f*; German 25, 26, 27; Physics 7; Geography 1; Geology 1.
Third and Fourth Years—Chemistry 7, 8, *e*, *h*, *i*, *k*, or *x*; Mineralogy 1; Metallurgy 1.

Particularly adapted to students who are looking forward to the career of analytical chemist and assayer.

C. Medical and Sanitary Chemistry

First Year—Chemistry 1, 3, *b*, *d*, (2, *a*); German 1, 2, 3.
Second Year—Chemistry 5, 6, *f*; German 25, 26, 27; Physics 7.
Third and Fourth Years—Chemistry 7, 8, 17, *e*, *l*, *k*, or *x*; Physiology 1, 2; Bacteriology A or 1.

Particularly adapted to students who are looking forward to medical education or to sanitary chemistry.

D. Chemical Engineering

This curriculum comprises four years of the necessary five years' work leading to the advanced degree of Engineer in Chemical Engineering. Candidates in this course receive the degree of A. B. in Chemistry upon completion of the following requirements:

First Year—Chemistry 1, 3, *b*, *d*, (2, *a*); German 1, 2, 3; Applied Mathematics 1*a*, 1*b*, 2*a*; Engineering 1, 2.
Second Year—Chemistry 5, 6, *f*; German 25, 26, 27; Applied Mathematics 2*b*, 3*a*, 3*b*; Engineering 3, 4; Mechanical Engineering 12.
Third Year—Chemistry 7, 8, *h*; Engineering 10, 11, 12; Physics 6; Mechanical Engineering 13.
Fourth Year—Chemistry 12, 13, 14, *e*; Physics 6; Mechanical Engineering 32, 33.

Intended particularly for students who are working toward the degree of Chemical Engineer and who desire to fit themselves for positions of responsibility in connection with the administration of industries involving chemical knowledge and skill.

Advanced Degrees

Applicants for the degree of Master of Arts in Chemistry will be expected to complete in addition to the requirements for the bachelor's degree, the equivalent of forty-five units work in the University—of which approximately two-thirds must be in the Department. This work will include a thesis based on laboratory work, and Chemistry 13, 14, and *k*, if not included in the undergraduate work.

Candidates for the advanced degree of Engineer in Chemical Engineering will be required to complete, in addition to the requirements for the A. B. degree specified under course D: Chemistry *k* or *x*; Mechanical Engineering 14, 21, 23, 36, and a thesis based on laboratory work. Electrical Engineering is advised, if possible, though not required. It is estimated that these requirements may be completed in one year after the completion of the requirements under Course D.

Candidates for the degree of Doctor of Philosophy in Chemistry, after the completion of the equivalent of the requirements for Master of Arts or Engineer, will follow such courses as are approved by the Department faculty, subject to general University regulations.

The Teacher's Recommendation.—The minimum requirements for the high school teacher's recommendation in Chemistry are as follows:

a. To teach chemistry as a minor high school subject: Courses1-3 or 4, *b* (General Inorganic lectures and laboratory); *c* (Qualitative Analysis); 5, 6 (Principles of Chemistry); and either 7 or 10 (Organic Chemistry). Total, 27 units.

b. To teach chemistry as a major high school subject; courses 1-3 or 4, *b* (General Inorganic lectures and laboratory); *d* (Qualitative Analysis); *f* (Quantitative Analysis); 5, 6, (Principles of Chemistry); 7, 8 (Organic Chemistry). Total, 37 units.

Laboratory Fees.—A charge of $25 per quarter will be made to students in each laboratory course of not more than six units registration. Of this charge $8 per quarter is returnable, less bill for breakage and loss of apparatus. A charge of $15 will be made for 3 units credit in Chemistry *i* or *x*, $4 returnable, less breakage.

ECONOMICS

AND POLITICAL SCIENCE

[2]Murray Shipley Wildman, Albert Conser Whitaker, †Alvin Saunders Johnson, Professors.

Eliot Jones, Associate Professor.

Harlow Lindley, Acting Associate Professor (spring and summer).

Victor J. West, Frederick Benjamin Garver, Assistant Professors.

Margaret Mulford Lothrop, Instructor.

Yamato Ichihashi, [23]George Archibald Clark, Lecturers.

Jesse R. Crandal, Frank A. Scofield, Earl Scott Dysinger, Assistants.

Graduation.—To arrange a course of study leading to the degree of Bachelor of Arts a student should consult freely with his departmental adviser in order that his programme of work may be adapted to his special needs or interest. In making such a programme at least a fourth of the required 180 units should be selected from courses offered in this department and at least a third of these should be advanced.

In addition to courses offered in this department others offered in History, Law, Philosophy, English, sciences, and the languages will be found helpful and under normal conditions should be taken.

Course 1 is prerequisite to other courses in Economics except where otherwise stated in the description of a course, and Course 2 is prerequisite to all others in Political Science. Both of these courses (or their equivalent) are required of all candidates for graduation in this department.

Teacher's Certificate.—To obtain a teacher's certificate with a major in this department a student will be required to secure credit for 45 units of work in Economics and Political Science. For a certificate with a minor in this department credit for 25 units is required. In either case Course 1 and Course 2 must be included.

Journalism.—Students, majors in this department, who desire to prepare for journalism are referred to the announcement under English.

Elementary and General Courses

1. Elements of Economics.—General and introductory course, primarily for first year and second year students. Three lectures and two quiz hours each week. Seniors and Juniors may register for this course,

† Absent on leave, 1917-18.

2 Absent on leave, winter quarter; 23 absent on leave, beginning winter quarter.

but will be given but three units of credit and their attendance in quiz sections is not compulsory.

5 units, autumn, *winter, *spring, and *summer quarters (Wildman, Jones, Garver, Lothrop) MTWThF 9

2. Elements of Political Science.—An introductory study of the origin and nature of the state, forms of government, citizenship, political parties, and theories of state functions. A general course open to all students. This course, or its equivalent, is prerequisite for all other political science courses, and is required for majors.

5 units, autumn and *summer quarters (West) TWThFS 8

3. Elementary Accounting.—Development of accounting; theory of debit and credit; bookkeeping forms and practice; preparation of balance sheets and their interpretation; application of theory and principle to simple systems of accounts; practical accounting problems. Should be taken by students expecting to enter courses 20 and 55.

5 units, autumn, *spring, and *summer quarters (Scofield) TWThFS 10

5. Railway Transportation.—Historical account of railroad transportation; development of railroad systems; state and federal legislation; decisions of the commissions and of the courts; government ownership and operation.

5 units, autumn quarter (Jones) MTWThF 8

6. Introduction to Statistics.—A study of elementary statistical methods, based upon data drawn from the phenomena of population, industry, commerce, and finance. Among the formal aspects of the subject attention will be given to the collection and tabulation of data, the construction and use of diagrams, the different kinds of averages and their uses, dispersion, correlation, index numbers, graphical methods. An attempt will be made to illustrate the application of statistical methods to business problems as well as to those of economics in the broader sense. (Three lecture periods and two hours of laboratory work each week, at hours to be arranged.)

5 units, spring quarter (———) [Not given in 1917-18]

7. Financial History of the United States.—A general historical survey of the financial policy of the national government with especial emphasis on the Revolution, Civil War, and recent periods. The subject matter of the course includes the tariff, the internal revenue system, public finances in time of war, the public land policy, the growth of public expenditures, management of the public debt, and treasury administration. Open to all students who have had or are taking Economics 1.

4 units, winter quarter (Garver) MTWF 11

8. Economic Resources of the United States.—A lecture and reading course on the economic resources of the United States, with some attention to the problems of conservation and public control. This course should be taken as prerequisite to *25b*, Marketing of Farm Products, and *67*, Industrial Development of the United States.

5 units (———) [Not given in 1917-18]

9. State and Local Government.—Township, county, and state government in the United States, with special attention to California. Prerequisite: course 2.

5 units, winter quarter (WEST) TWThFS 8

10. Bond Values and Capitalization.—A course in the "accountancy of investment." Methods of valuing income-bearing properties and securities on the basis of a rate of interest, and of finding the rate of interest yielded on investments. Depreciation and sinking funds. The student's work will consist largely in the solution of assigned problems. No advanced mathematics required.

4 units, autumn quarter (WHITAKER) MTWTh 9

12. Financing of Enterprises.—Considers incorporation, issue and marketing of securities, the management of debt, and the financing of undertakings generally. For engineering majors.

4 units, winter quarter (WHITAKER) MTWF 11

15. Problems of State Government.—Some of the more pressing present day difficulties in state government examined critically and constructively. Intended especially for teachers of Civics. Carries no credit for those who have credit for course 9.

3 units, summer quarter (WEST) TThS 10

INTERMEDIATE COURSES

[The following courses are primarily for students who have more than forty units of university credit.]

20. Corporation Finance.—Elementary survey of corporation law; the organization and management of corporations; the corporation's securities, stocks and bonds and their classification; the stock market and stock speculation; capitalization, surplus, reserve, and financial policy; the provision of new capital; promotion, underwriting, receiverships and reorganization. Best preceded by course 10.

4 units, winter quarter (WHITAKER) MTWTh 9

21. Public Finance.—A general course dealing with the principles involved in the conduct of government finances. The major part of the course is occupied with the subject of taxation, including the national,

state, and local systems, but the subjects of public debts, public expenditures, the budget, and financial administration are also discussed.

4 units, autumn quarter (GARVER) MTWTh 10

22. Labor Problems.—A general course. The topics considered include the following: the rise of the wage earning class, the industrial revolution, unemployment, woman and child labor, wages, and collective bargaining.

5 units, summer quarter (GARVER) MTWThF 8

23a. Social Agencies. A general survey of the problems of poverty and of the modern methods of relief and prevention.

4 units, autumn quarter (LOTHROP) TWThF 10

23b. Social Agencies.—A continuation of course *23a*, but open to those who have not had that course.

4 units, winter quarter (LOTHROP) TWThF 10

23c. Social Agencies.—A general survey of the problems of corrections: the criminal and his characteristics, the treatment of the criminal, the causes and prevention of crime.

4 units, spring quarter (LOTHROP) MTWTh 10

24. Economics and the Home.—The problems of the household as a factor in the consumption of wealth.

3 units, winter quarter (LOTHROP) MWF 11

25a. Marketing of Manufactured Products.—An analysis of the commercial mechanism which has been developed in the United States for the distribution of commodities from manufacturer to consumer, including the organization and inter-relation of the principal types of marketing agencies. Not open to first year students.

3 units [Not given in 1917-18]

25b. Marketing of Farm Products and Raw Materials.—A study of the forces determining the movement of commodities from producing areas to consuming centers, and of the commercial organization for assembling the raw materials of industry; coöperative marketing systems, notably the association of producers as developed in California; and a survey of available markets for American farm products. Prerequisite: course 8.

3 units [Not given in 1917-18]

26. Money and Credits.—The elements of monetary theory; the laws of coinage, legal tender, and credit; the standard of value, price movements and their relation to prosperity.

3 units, autumn quarter (WILDMAN) TThS 9

27. Insurance.—General principles of insurance; their development and application to modern business; organization, forms, and technique of life insurance, industrial insurance; problems of state control.

4 units, spring quarter (———) [Not given in 1917-18.]

28. Foreign Exchanges.—A study of the system of settling international indebtedness; principles and practice of exchange banking; money markets of the world and their relations. Domestic exchange will also be considered.

4 units, summer quarter (WHITAKER) MTWTh 9

29. Intermediate Accounting.—A continuation of the subject with emphasis on more specialized systems of accounts and more complicated problems. Prerequisite: course 3 or its equivalent.

3 units, winter quarter (SCOFIELD) MWF 11

30. Water Transportation.—Historical account of ocean transportation; decline of the American merchant marine engaged in foreign trade explained; necessity of a merchant marine considered; means of establishing a merchant marine analyzed; experience of foreign nations; combination movement in shipping and shipbuilding in United States; Panama Canal; effect of the European War; federal legislation; future of American merchant marine.

4 units, winter quarter (JONES) MTWTh 8

34. Comparative Federal Government.—An inquiry into the operation of the federal principle in the United States, Germany, Switzerland, and Argentine. Prerequisite: course 2.

4 units, spring quarter (WEST) TWThF 8

35. Parliamentary Government.—A study of those European governments of which the responsible ministry is the characteristic feature; especial attention to England and France.

4 units, summer quarter (LINDLEY) MTWTh 10

36. Municipal Government.—Analytic and comparative study of city government in Europe and the United States; relation of the city to the central government; organization of city government; special problems of administration.

4 units, spring quarter (LINDLEY) MTWTh 10

38. American Methods of Taxation.—An examination of some of the more important taxes levied by the national, state and local governments. A detailed and practical study will be made of income, corporation, railroad, bank, insurance, and land taxes. The organization and methods of the leading state tax commissions will also be considered.

4 units, summer quarter (GARVER) MTWTh 10

Advanced and Graduate Courses

[The courses which follow are not open to any students with less than 80 units of university credit.]

50. Railway Rates and Regulation.—An analysis of the economic and legal aspects of railroad rate-making. The decisions of the commissions and the courts will be studied. Prerequisite: course 5.

4 units, spring quarter (Jones) MTWTh 10

51a. Secretarial Training.—Offering in the fall quarter the fundamental training of a stenographer. Open only to junior and senior students of the department who expect to enter upon a business career, and to majors in Education. One hour of instruction and two hours of practice, four times weekly.

4 units, autumn quarter (Crandal) MTWF 11

51b. Secretarial Training.—A continuation course offering practice work in connection with the common range of secretarial problems, in so far as possible carried out under actual office conditions. Open to students who have had 51*a* or its equivalent.

4 units, winter quarter (Scofield) MTWF 11

51c. Secretarial Training.—A continuation course offering further practice work.

4 units spring quarter (Scofield) MTWF 11

52. Banking.—The organization of American credit institutions under the Federal Reserve Act, and a comparison between American and European practice.

3 units, spring quarter (Wildman) TThS 9

53. Population.—The purpose of this course is threefold: (1) A historical survey of the phenomena of population in the leading countries, (2) an examination of theories of population, and (3) an attempt to determine the position of population as an economic factor. Students intending to take course 54 are advised to take this course as preparatory to it.

3 units, winter quarter (Ichihashi) MTW 10

54. Immigration and the Race Problem. A study of immigration as a phenomenon of population, and the social and economic significance of the ethnic composition as affected by it, with special reference to the United States.

3 units, spring quarter (Ichihashi) MTW 10

55. Advanced Accounting.—[Not given in 1917-18.]

58. Investments.—A study of the issues of national, state, and municipal governments, of railway, industrial, and irrigation companies

from the investor's point of view, and the organization and methods of bond and brokerage houses.

3 units, summer quarter (Wildman) TThS 9

59. **Combinations and Trusts.**—The forms and methods of industrial pools and combinations or "trusts," and the problem of public control. The course deals with the Federal Anti-trust Legislation and its construction by the courts.

4 units, summer quarter (Whitaker) MTWTh 10

60. **Valuation.**—The valuation of the properties of public service companies for the purposes of the regulation of rates, with an introductory study of relevant parts of the theory of value and of interest. Courses 10 and 20 should precede course 60.

4 units, autumn quarter (Whitaker) MTWTh 10

61. **Value and Distribution.**—A study of the factors which determine the values of economic goods, and of those which determine the "shares in the distribution of wealth." Prerequisite: 12 units of economics and senior standing, or the permission of the instructor.

4 units, autumn quarter (Garver) MTWTh 8

62. **History of Political Theory.**

4 units, spring quarter (Lindley)

63. **American Political Theories.**

4 units, summer quarter (Lindley)

64. **Political Parties.**—Development of nominating machinery in the United States; party organization; party activities; reform movements; the true functions of parties.

3 units, autumn quarter (West) TThS 10

65. **American Politics.** An examination of the American system with reference to the extent and effectiveness of popular control, special attention being given to the problems connected with elections and legislation.

4 units, winter quarter (———) [Not given in 1917-18]

66a. **Current Political Problems.**—A course designed for well prepared students who desire to make individual studies of present day problems in domestic and foreign politics.

4 units, winter quarter (Johnson) [Not given in 1917-18]

66b. **Current Political Problems.**—A continuation of course 66*a* but open to students who have not had that course.

4 units, spring quarter (West) TWThF 9

66c. Current Political Problems.—A continuation course, but open to students who have not had 66*b*.

4 units, summer quarter (———) [Not given in 1917-18]

67. Industrial Development of the United States.—A lecture course outlining the economic development of the United States since the period of the Industrial Revolution. Attention will be given to foreign commerce and internal trade; agriculture, mining, and the growth of the West; irrigation and conservation; manufactures and the evolution of selected industries; from the point of view of technical advance and of industrial and commercial organization; the concentration of industry and labor problems; business cycles and industrial crises; the expansion of American foreign trade. To be preceded by course 8, or by a survey course in American history.

3 units, summer quarter (———) MWF 11

68. Seminar in Government.—Topic for 1917-18: Procedure in legislative assemblies in the United States.

Winter quarter (WEST) By arrangement

69. Seminar in Railroad Administration. This seminar is designed for advanced students.

Spring quarter (JONES) By arrangement

70. Graduate Seminar.—Open only to candidates for higher degrees and members of the department.

Autumn, winter, and spring quarters (WILDMAN) By arrangement

EDUCATION

SCHOOL OF EDUCATION

The purpose of the School of Education, established in 1917, is to enable the University to meet, in a more satisfactory manner, the legitimate demands of the State in the matter of the preparation, training, and certification of teachers and school officers. The faculty of the School is composed of the faculty of the Department of Education, together with representatives from other departments concerned with the preparation of teachers for the intermediate and secondary schools; and the faculty of the School has outlined courses for preparation in both majors and minors which will lead to certification as teachers. A special announcement of the School, giving details as to its organization, requirements, and programmes of study, will be issued early in June, 1918.

Of this School, the faculty of the Department of Education proper constitutes one division, and the faculty of the Division of Graphic Arts another division, and students in each will receive their degrees through the School of Education.

Department of Education

Ellwood Patterson Cubberley, Lewis Madison Terman, Professors.
Percy Erwin Davidson, Jesse Brundage Sears, Associate Professors.
William Martin Proctor, Instructor.
Morris Elmer Dailey, George Archibald Clark, Lecturers.
Samuel C. Kohs, Research Fellow on the Buckel Foundation.

Division of Graphic Art

Arthur Bridgman Clark, Professor.
Chloe Lesley Starks, Instructor.

The Department of Education offers six main lines of work:

1. Courses of a general nature on the history, function, and administration of public education, intended in part as information courses for the general university student and without reference to the work of teaching. To such students the courses of Groups I and II are recommended.

2. Three major courses, which may be followed by candidates for the High School Teacher's Recommendation, each counting as one of the required majors, and offering preparation along the following lines:

a. Theory of Education. Intended for those desiring a general acquaintance with educational theory.

b. Supervisor of Special Subjects. Intended as preparation for those planning to become supervisors of special subjects, such as English, History, Science, Mathematics, in normal schools or in public schools.

c. Principal or Superintendent. Intended for those desiring recommendation for administrative work in city school systems.

Each such major course requires the completion of 45 units of work in the Department of Education. (For an outline of each course, see the Announcement of the School of Education.)

3. Courses intended to assist other departments in preparing their students for certification to teach in secondary schools in California. All such students should confer with members of the Department of Education as to courses, but in general courses 1, 2, 3, 20, and 24 are recommended, if the candidate has not had experience in teaching.

Three units of work in courses relating to secondary-school work are required under the regulations of the California State Board of Education for the high school teacher's recommendation, as are courses 27 and 28, if the candidate has not had previous experience in teaching. (For a more detailed statement, see *Register,* pp. 90-93, or the Announcement of the School of Education.)

4. Courses primarily for major students, or those making Education a minor, and intended to give special preparation to (*a*) those who desire to become teachers of Education in normal schools or colleges, (*b*) those who wish to prepare for supervisory or administrative positions in the public schools, elementary or secondary, and (*c*) those who wish to prepare for special educational work in the elementary or secondary field.

5. Courses and research work in the psychology and pedagogy of exceptional children. Two lines of work are offered in this field: (*a*) elementary courses designed to give prospective superintendents and principals a general acquaintance with the problems of special education, and (*b*) research courses for the advance student who looks forward to work as clinical psychologist in the public schools or in institutions for defectives or delinquents. The Dr. C. Annette Buckel Foundation, supplemented by additional support from the Board of Trustees of the University, has provided for a "research fellowship in the psychology and pedagogy of backward children."

6. Courses for the preparation of teachers of drawing for the public schools, and for the general training of college students in artistic perception and graphic expression. (See Division of Graphic Art.) Students may enroll as major students in this division, beginning with the freshman year.

The courses in Education are open to all students as electives or as minor subjects, but only those who desire to prepare for one of the lines of work mentioned above under (4) or (5), and whose preparation and experience are satisfactory to the Department, will be accepted as major students. Only graduates of normal schools or other teachers' training schools, and those having had teaching experience and having junior standing, will be accepted as major students in Education during the two undergraduate years. Graduate work in Education is open to all properly qualified students, without these restrictions.

Major Requirements

Undergraduate Work.—Major students begin their work in Education with the junior year, taking courses 1, 2, and 3. Psychology 1

and 4 should also be taken this same year. Collateral work will be advised to meet individual needs, though a course in biological science and the course in Organic Evolution ordinarily will be required. For graduation the student must complete thirty units of selected work in the department, and satisfy the requirements of one teaching major or two minors in the School of Education and outside the department. Students coming with advanced or graduate standing from other universities may have substantially equivalent preparation or experience accepted in lieu of the courses and the major and minor work required here.

First Graduate Year.—The requirements for the baccalaureate degree cover only introductions to the different fields of Education, and those proposing to offer themselves for responsible positions in educational work will be expected to proceed at once to the Master's degree. For this at least thirty units in advance of the baccalaureate requirements, together with the presentation of a satisfactory thesis, will be required. Work in Group I will not be included, and ordinarily one-half of the thirty units must be work listed under Groups III and IV. The completion of the first year of graduate study should mean a somewhat general acquaintance with the different fields of Education, together with the beginnings of specialization in some one or two of these. Those who desire to prepare properly for the type of positions indicated under 4 or 5 should proceed to the doctorate.

Second Graduate Year.—During the second year of graduate study the student will be expected to attain a mastery of the literature and practice in three of the following divisions of the subject: (1) History of Education, European and American, (2) the Theory and Practice of Elementary or Secondary Education, (3) Administration of Education, (4) Educational Psychology and Theory, (5) Educational Hygiene. Students intending to proceed to the doctorate, either at once or later, should select one of these divisions as a major and one as a minor, and by the end of the second year of graduate study should also have completed in large part the required work in a second minor, outside of the Department; should be able to pass off the modern language requirements; and should be well started on the dissertation.

Third Graduate Year.—At the close of the second year, or the beginning of the third year, all who desire to proceed to the doctorate will be expected to pass an oral and a written test, to be known as the preliminary examinations for candidacy for the Ph. D. degree, in three

of the five divisions of the field given above. These tests will extend beyond the range of the courses offered, and will involve a knowledge of the literature and practice in each field. Only those passing this test will be considered as accepted candidates for the Ph. D. degree. The final year will be devoted largely to personal investigation along the lines of the thesis subject under the direction of the member of the department in charge.

Library and Practical Facilities

The general university library contains the important recent books, and files of the more important educational magazines, both American and foreign. The collection of early American educational magazines and reports is also good. The special library of the Department, consisting of about 7500 volumes, contains one of the most complete collections of American state and city school reports to be found in the United States, the library ranking probably third in this respect. It is also rich in old college and normal school catalogues and text-books, of much historical value. The collection of old and present-day school text-books is also large and valuable.

In practical facilities the department has good working connections with the State Normal School at San Jose, and with the public schools of the immediate vicinity. For more important studies by advanced students the large school system in the vicinity of the University can be made available.

The department is also provided with a research laboratory for use in connection with the Buckel Foundation. This is well equipped with the apparatus, blanks, and other materials used in mental and physical tests.

I. Elementary and Introductory Courses

[Open to any one with teaching experience, and to all others except first-year students.]

1. Public Education in America.—A study of the development, province, and some of the more important problems of public education in the United States. An introductory course. Lectures, following a syllabus, with assigned readings.

3 units, autumn quarter (Cubberley) MWF 11

2. Educational Theory.—An introductory course dealing with topics fundamental to education, such as biological infancy, human endowment and culture, education and the social order, individual difference, types of learning, the order of growth, character, etc. Lectures, following a syllabus, with assigned readings.

3 units, winter quarter (Davidson) MWF 11

3. History of Education in America.—A study of the evolution of American educational ideals and practices, with some emphasis upon their more important European antecedents, but with special reference to the origin and development of those features of our present-day practices, which are most characteristically American. Lectures, following a syllabus, with assigned readings.

3 units, spring quarter (SEARS) MWF 11

II. MORE ADVANCED COURSES, BUT OF A SOMEWHAT GENERAL NATURE

[Open to those of teaching experience, and to third- and fourth-year students. In general, courses 1, 2, and 3 should precede these courses.]

10. Primary Education.—A study of the history and institutions for the formal education of young children; provisions in other countries; the kindergarten in America; the reforms of Montessori and others; pedagogy of the primary-school period.

4 units, winter quarter (DAVIDSON) [Not given in 1917-18.]

12. Social and Moral Education.—A study of the significance for education of the psychology of character. Growth and character; types and individual differences; principles of training; educative agencies.

4 units, winter and *summer quarters (DAVIDSON)
(winter) MTWTh 9; (summer) MTWTh 8

14. Logic of Education.—A study of the significance for education of the psychology of attention, interest, and thinking. Development; individual differences; principles of training; educative agencies.

4 units, spring quarter (DAVIDSON) MTWTh 9

16. Hygiene of the School Child. A study of the physical basis of education, including such topics as the general laws of growth, disorders, defectiveness, educational hygiene, preventative hygiene, and medical inspection.

2 units, 2d term, summer quarter (TERMAN) TThS 11

17. Hygiene of the School Plant.—A study of the fundamental problems involved in schoolhouse construction, including standards of construction and planning, unit cost, etc.

2 units, 1st term, summer quarter (TERMAN) TThS 11

19. Exceptional Children.—A somewhat general course dealing with the frequency, causes, and consequences of mental deficiency, and with the social and educational treatment of defective, delinquent, superior, backward, and psychopathic children.

2 units, winter quarter (KOHS) [Not given in 1917-18.]

III. Courses Intended Primarily for Those Preparing to Teach in Secondary Schools

[Open to seniors and graduate students. Course 27 should precede course 28 by one quarter.]

20. Principles of Secondary Education.—A course dealing with the aims, purposes, and underlying principles of secondary education, intended for those preparing to teach in secondary schools, and required of all candidates for the California High School Recommendation. Open to seniors and graduate students only.

3 units, autumn and *spring quarters (Proctor) MWF 8

22. Problems in Secondary Education.—A consideration of a number of practical problems relating to the administration of a secondary school, such as organization, curricula, teaching staff, community, relationships, etc. American and foreign secondary schools will be compared as to purpose and scope. A specific problem will be taken up for investigation by each student electing the course. Open to those who have had course 20, or teaching experience, and especially intended for those preparing for administrative work in the secondary field.

3 units, winter and *summer quarters (Proctor)
(winter) MWF 8; (summer) WF 2-4

23. The Administration of a High School.—A practical course, dealing with the organization and administration of a school of secondary grade.

2½ units, 1st term, summer quarter (——) MTWThF 9

24. Adolescence.—A study of the high school pupil with special reference to the needs of students who expect to teach in secondary schools.

2 units, 2d term, summer quarter (Terman) MWF 11

25. Vocational Guidance in High Schools.—A course in the principles, methods, and literature of vocational guidance, and intended to equip teachers to undertake work in vocational guidance in secondary schools.

2 units, winter quarter (Proctor) TTh 8
2½ units, 2d term, summer quarter (——) MTWThF 9

27. Methods and Management of Instruction.—A practical course in the methods and management of secondary instruction. The psychology of the high school subjects will be considered and opportunity for directed observation of expert secondary instruction will be given. This course is intended to be a preparation for practice teaching, and should be taken before course 28.

2 units, autumn and *spring quarters (Proctor) TTh 8

28. Practice Teaching.—Practice in the handling of classes and the giving of instruction, with accompanying conferences, six units of credit in such being required by the rules of the State Board of Education for a California High School Teacher's Recommendation. This may be arranged for at the University, at the San Jose Normal, or at any other California State Normal School. For opportunities to do practice teaching, arrangement of hours, etc., prospective cadet teachers must confer, in advance: (*a*) if at the University, with Mr. PROCTOR; (*b*) if at the San Jose State Normal School, with President DAILEY. Conference with all practice teachers required each week.

3 units, autumn, *winter, and *spring quarters (PROCTOR, DAILEY) Conference, M 4:05-5

IV. ADVANCED AND SPECIAL COURSES

[Intended primarily for teachers of some experience, and for students making Education a major or a minor. Open to such, of junior standing or above.]

30. Educational Problems.—A discussion club. Intended for senior and graduate students in Education. Open on invitation. During the summer quarter an evening lecture course, open to any senior or graduate student of proper preparation.

1 unit, each quarter (CUBBERLEY, SEARS, TERMAN) W 7:45-9:45

31. Education and Modern Social Problems.—A survey of the demands made upon public education by students of modern social problems, and a consideration of possible means of satisfying them. Arranged primarily for prospective supervisors and administrators of schools and school systems. Open to others by permission.

2½ units, 2d term, summer quarter (DAVIDSON) MTWThF 10

33a. Educational Psychology.—Original endowment; mental development; individual differences in relation to heredity, sex, and environment. Prerequisites: General Psychology.

4 units, autumn quarter (TERMAN) MWF 11

33b. Educational Psychology.—The psychology of learning; formal discipline; work and fatigue. Prerequisites: General and Experimental Psychology, or their equivalents.

4 units, winter quarter (TERMAN) MWF 11

35. Educational Statistics.—This course will deal with the theoretical and practical aspects of statistical methods as applied to education, including scales, units, and standards. The use of calculating instruments, calculating handbooks, and graphic methods will be demonstrated, and practice will be given in treatment of statistical data. In so far as possible the program will be adjusted to meet the needs of

individual students specializing in mental measurements, experimental pedagogy, or educational administration.

3 units, autumn quarter (Kohs) MWF 9
2½ units, 1st term, summer quarter (Kohs) MTWThF 8

35b. Educational Statistics: Advanced Course. A continuation of Education 35, with special emphasis upon the practical working out of individual problems. Prerequisite: Education 35.

3 units, winter quarter (Kohs) Hours by arrangement

37. Mental Deficiency.—The physical and mental traits of the feeble-minded; heredity; medical types; psychological diagnosis; the conduct of special classes, etc. The course will involve visitation of institutions for defectives, observation of special classes, and demonstration tests. A part of the work will necessarily be done away from the University.

2½ units, 2d term, summer quarter (Kohs) MTWThF 8

38. Individual Differences.—A review of the experimental data bearing on the influence of age, sex, heredity, and environment in the production of individual differences found among school children. The work will be based chiefly on the results of mental tests. The use of intelligence scales in the classification and grading of school children will be shown by means of demonstration tests.

2 units, 1st term, summer quarter (Terman) MWF 11

39. History of Education in Europe.—A study of the development of educational ideals and systems through the Greek, Roman, Mediaeval, and modern periods in Europe, with the main emphasis upon the post-renaissance period and the transition of influence to America. A study of both texts and sources. Designed especially for those expecting to teach the history of education in normal schools and colleges.

4 units, winter quarter (Sears) MWF 9

40. State School Administration.—A study of the educational principles underlying the proper administration of school systems in states and counties, and involving a comparative study of the school laws and school systems of the various American states. The course includes a study of such topics as federal and state policy, forms of control, revenue and its apportionment, the state and the teacher, the state and the child, private and sectarian education, and state oversight and control.

5 units, autumn and *summer quarters (Cubberley) MTWThF 10

41. The California School System.—A critical study of the California state system of education. The California School Code will be carefully examined in comparison with the "School Code of Osceola" and other important state school codes.

2 units, spring quarter (Sears) F 2-4

42a. Rural Education.—A study of the social and economic factors involved in the development of rural institutional life; how these explain the present status of the larger administrative and supervisory problems of rural education; and the principles and practical methods essential to the solution of these problems.

3 units, spring quarter (Sears) TTh 2-4

42b. Problems in Rural Education.—A course similar to 42*a*, but dealing more particularly with problems affecting the organization, administration, and supervision of rural schools.

3 units, summer quarter (Sears) TTh 2-4

43. Foreign School Systems.—A comparative study of the more important foreign state school systems, their policy of organization, ideals of work, methods of instruction, training of teachers, courses of study, statistics, and recent reforms.

3 units (Cubberley) [Not given in 1917-18.]

45. City School Administration.—A study of the educational, financial, and administrative principles underlying the proper administration of school systems in cities, with a view to the establishment of principles of action. A thesis on some problem in city school organization or administration or a survey of some city school system required of each student.

5 units, spring quarter (Cubberley) MTWThF 10

46. The Principal and His School.—A practical course, dealing with the organization and administration of a single school, the organization and supervision of instruction, school extension, community relationships, etc. Thesis on some administrative problem required of each student.

3 units, spring quarter (Cubberley) TTh 11

47. Administration of a City School System.—A practical course, dealing with the organization and administration of a group of schools under a city board of education, and dealing with such topics as educational and business organization, the organization of instruction, buildings, finance, and plans for development.

3 units, summer quarter (Cubberley) M 2-4

50. The Elementary School Curriculum.—A study of the principles underlying the organization of subject matter for courses in the elementary school, including a critical examination of curricula, syllabi, and school texts in the light of their function in the teaching and administration of the curriculum.

5 units, summer quarter (Sears) MTWThF 9

51. Organization and Supervision of Elementary Education.—This course will deal with the more important problems of organization, management, and supervision of the elementary school, including such topics as grade, departmental, group, and individual systems of class organization; typical promotion schemes; programme making; time allotment; grades and marks; records and reports; attendance, and the practical use of pedagogical tests in the supervision of instruction.

5 units, winter quarter (Sears) MTWThF 10

55a. Experimental Pedagogy.—A survey of the experimental and statistical studies bearing upon the teaching of the elementary and secondary school subjects. The course should ordinarily be preceded by the courses in Educational Statistics (35) and Experimental Psychology (Psychology 2*a*). Open by Permission.

3 units, winter quarter (Davidson) MW 2:05-4:05

55b. Experimental Pedagogy.—A continuation of 55*a*, with more attention to special and individual studies.

3 units, spring quarter (Davidson) MW 2:05-4:05

55c. Experimental Pedagogy.—An abridged one-quarter course, intended for summer quarter students. Students may enter the second half on permission of the instructor.

3 units, summer quarter (Davidson) TTh 2:05-4:05

57a. Intelligence Tests and the Psychology of Endowment.—The first quarter will be devoted to a critical survey of the literature of mental tests, with special reference to the psychological principles of measuring intelligence. Prerequisites: General and Experimental Psychology, and Educational Psychology (33*a* and 33*b*), or its equivalent.

4 units, autumn quarter (Terman) TTh 1:05-3:05

57b. Intelligence Tests and the Psychology of Endowment.—A continuation of 57*a*. During the second quarter practice will be given in mental testing and the treatment of data.

4 units, winter quarter (Terman) TTh 1:05-3:05

60. Thesis Work.—In certain courses, students may be given an additional unit of credit on presentation of a satisfactory thesis on an assigned topic, embodying the results of independent work. The consent of the instructor is necessary before registering.

1 unit, any quarter.

61. Criticism and Supervision of Instruction.—A few advanced students, who have had sufficient teaching experience, will be allowed to undertake the personal investigation, in the schools of the vicinity, of problems in instruction or supervision. Collateral reading and detailed

written reports will be required. Enrollment only after conference with the instructor concerned.

1 unit, autumn, *winter, and *spring quarters (Sears, Proctor)

62. **Special Courses.**—Special work in independent investigations will be provided for students prepared to do advanced work, the nature of the investigation being determined by the student's preparation and needs. Candidates for advanced degrees will ordinarily register their thesis under this course, the number of units of credit being subject to individual arrangement. The members of the instructing staff stand ready to supervise independent investigations in the following fields:

(*a*) History and organization of American Education. (Sears)

(*b*) Problems in state, county, and city school administration. (Cubberley)

(*c*) Problems in educational theory. (Davidson)

(*d*) Problems in elementary and rural education. (Sears)

(*e*) Problems in the organization and administration of secondary education. (————)

(*f*) Problems in mental development, educational psychology, and school hygiene. (Terman)

A. Commercial Teachers' Training.—A demonstration course in teaching the standard high school commercial subjects, laying emphasis on the practical side of the work, office routine, and management—the training of the private secretary rather than the mere clerk or amanuensis. The course is designed to be of special interest to teachers; students preparing to teach the commercial branches should take the course after having completed Economics 3, 51*a*, and 51*b*.

4 units, summer quarter (G. A. Clark) MTWF 11

V. Courses for Teachers of Special Subjects

A number of special courses of instruction, and groupings of courses, designed to prepare teachers for special work in the public schools, are being arranged. These courses will be described in the Announcement of the School of Education, to be issued in June; they include courses designed to prepare commercial teachers, manual arts teachers, teachers of home economics (in connection with the Santa Barbara or San Jose State Normal Schools), etc.

VI. Courses in Other Departments

The following Teachers' Courses, in other departments, are designed for students preparing to teach special subjects in secondary schools,

and are offered in connection with the preparation in the teaching majors and minors in the School of Education. Such courses are usually necessary for the Teacher's Recommendation, and may be counted to the extent of four and a half units as part of the work required in Education. (See Announcement of the School of Education for further information.)

a. Teacher's Course in Chemistry.—[See Department of Chemistry.]

b. Teacher's Course in Drawing.—[See Division of Graphic Art.]

c. Teacher's Course in English.—[See Department of English.]

d. Teacher's Course in French.—[See Department of Romanic Languages.]

e. Teacher's Course in German.—[See Department of Germanic Languages.]

f. Teacher's Course in Greek.—[See Department of Greek.]

g. Teacher's Course in History.—[See Department of History.]

h. Teacher's Course in Latin.—[See Department of Latin.]

i. Teacher's Course in Oral Expression.—[See Department of English.]

j. Teacher's Course in Physics.—[See Department of Physics.]

k. Teacher's Course in Spanish.—[See Department of Romanic Languages.]

DIVISION OF GRAPHIC ART

The work aims primarily to prepare students for positions as teachers of drawing and art in secondary schools. Many of the courses are also suitable for the practical and general cultural needs of students in other departments.

Intending teachers of art may register in the division of Graphic Art, with Education as their major subject. The art work of such students should be somewhat as follows, although the particular year when a course should be taken is often immaterial:

First Year.—Autumn quarter: Still-Life, 4 units; Perspective, 5 units. Winter quarter: Linear Drawing, Lettering (Engineering 1, 2), 2 units. Spring quarter: Organic Form, 4 units.

Second Year.—Autumn quarter: Design (3), Pottery or Textiles (2), 5 units. Winter quarter: Metal Work, 4 units. Spring quarter: Landscape, 4 units.

THIRD YEAR.—Autumn quarter: Renaissance Painters, 3 units. Winter quarter: Art of the Home, or Metal Work, 5 units; Machine Drawing (M. E., 12), 3 units. Spring quarter: Science Drawing, 3 units.

FOURTH YEAR.—Autumn quarter: Textiles, 3 units; seminar, 1 unit. Winter quarter: Art of the Home (if not taken earlier), or Metal Work, 5 units; Modern Painters, 3 units.

FIFTH YEAR.—Autumn quarter: Advanced Design, 4 units; Pottery or Textiles, 4 units. Winter quarter: Teachers' Course, 4 units; special problems in art education and thesis (during autumn and winter quarters), 18 units.

Students wishing to qualify themselves for the Special Certificate as Teachers of Art, granted by the State Board of Education (see page 92) may do so by completing 180 units for the A. B. degree, 67 of which must be in Graphic Art and Manual Training, and 23 units (including course 10 in Graphic Art) in Education.

By attending summer quarters the time of the above programme, either for the "special" or regular teacher's certificate, may be materially shortened.

1. Still-Life.—Fundamental principles, in blocking, proportion, and light and shade; materials: charcoal and colored crayon. Open to all students.

3 to 4 units, autumn quarter (STARKS) MTWTh 1:05-4:05

2. Landscape.—Working out-of-doors in pencil, charcoal, and colored crayon. Open to all students who have had the equivalent of course 1.

3 to 4 units, spring quarter; 3 to 5 units, *summer quarter (STARKS)
(spring) MTWTh 1:05-4:05; (summer) MTWThF 1:05-4:05

3. Organic Form.—Drawing shells, leaf sprays, animal forms, etc., with reference to discipline in accuracy, and the perception of decorative arrangement. Preparation for course 4. Open to all students.

3 units, winter quarter; 3 to 4 units, *spring quarter
(winter, CLARK, DUNSHEE; spring, STARKS) TWThF 1:05-4:05

4. Design.—Exercises in the principles of space filling, borders, squares, surface patterns, etc. Intended to accompany execution of work in pottery, textiles, or metal. Three units of technical work, preferably course 3, a prerequisite.

3 to 4 units, autumn quarter; 3 to 5 units, *summer quarter
(autumn, CLARK) MTWTh 1:05-4:05; (summer, ———) MTWThF 9-12

5. Art of the Home.—A study of taste, convenience, and economy in house designing and furnishing; types of exteriors, arrangement of

grounds, plans, textiles and furniture, expense lists for different grades of income. (Given in even numbered years only.) Lectures open to all students with credit of two units. The full course, including considerable drawing, open to students who have had three units of technical work in drawing.

2 to 5 units, winter and *summer quarters (Clark)
Lec. TTh 1:05, criticism of drawings MWF 1:05

6a. Lectures on Painters of the Renaissance from Giotto to Velasquez.—Open to all students.

3 units, autumn quarter (Clark) MWF 8

6b. Lectures on Painters of the Nineteenth Century and of the Present Time.—Open to all students.

3 units, winter and *summer quarters (Clark) MWF 8

7a. Handicrafts.—Pottery, modeling, casting, glazing, and firing tiles, bowls, vases, etc. Open to students who have had three units of technical work in drawing or design.

3 to 5 units, autumn, *winter, and *summer quarters (Clark)
(autumn, winter) MTWThF 1:05-4:05; (summer) MTWThF 9-12

[Three afternoons of course 4, and two afternoons of pottery or textiles may be taken together for 5 units.]

7b. Handicrafts.—Metal work, making trays, bowls, book supports, etc., in sheet copper; and jewelry, in silver and semi-precious stones. Open to all students who have had three units of technical work in drawing or design.

3 to 4 units, winter quarter; 3 to 5 units, *summer quarter (Clark)
(winter) MTWTh 1:05-4:05; (summer) MTWThF 1:05-4:05

7c. Handicrafts.—Tooled leather, mats, card cases, etc. This work may be substituted in part for work in pottery or metal work.

7d. Handicrafts.—Textiles. The use of textiles in the articles of house use, and personal belongings. Stenciling, block-printing, and embroidering. Open to students who have had three units of technical work in drawing or design, or who are taking three units of design.

3 units, autumn quarter; 3 to 5 units, *summer quarter (Starks)
(autumn) WThF 1:05-4:05; (summer) MTWThF 8-12

8. Scientific Perspective.—A series of problems drawn with instruments, and involving the various principles of perspective and shades and shadows. The latter part of the course involves making drawings from actual buildings. Open to all students.

3 units, autumn quarter (Clark) TThS 8

9. Science Drawing.—A course designed to assist students in scientific illustration. It includes the drawing of simple scientific subjects

in pen outline, line and stipple shading, wash, line and wash. Especial attention is paid to the needs of individual students. Open to science students on advice.

3 units, autumn, *spring, and *summer quarters (Starks) 9-11 by arrangement

10. Teachers' Course.—For intending teachers of art. Discussions of the aims and methods in drawing and art instruction, and technical work in preparing courses of study. Open only to senior and graduate students.

4 units, winter quarter (Clark) [Not given in 1917-18.]

11. Seminar.—Discussion of special topics and current literature in art education. Open to senior and graduate students only.

1 unit, autumn quarter (Clark) T 4-5

12. Special Courses in Art Education.—Advanced work in connection with the subject matter of courses 4, 5, 7, 9, 10, and 11, will be arranged. (Clark) By arrangement

ENGINEERING

A. Entrance Subjects

Entering students whose major work is to be in any engineering department should be thoroughly prepared in elementary mathematics, and should have entrance credit in algebra (at least one and one-half units), plane and solid geometry, and plane trigonometry in order to be able to take the first year's work in applied mathematics for engineers. Furthermore, it is advisable for them to have entrance credit in mechanical drawing.

B. General Courses

I. APPLIED MATHEMATICS

[See courses announced by Department of Applied Mathematics.]

II. GENERAL TECHNICAL COURSES

1. Linear Drawing.—A training in the use of drafting implements to enable the student to construct accurate pencil drawings and make clean-cut ink lines. Open to all students, and required of those whose major subject is in Civil, Mechanical, Electrical, or Chemical Engineering, or in Geology and Mining, whether or not they have entrance credit in mechanical drawing. This requirement is waived, however, for a student who satisfies the instructor that he has had the equivalent of this course, by submitting certified work in linear drawing or by

passing a special examination. The instruments and materials for this course cost from twenty to thirty dollars.

1 unit, autumn, *winter, and *spring quarters (Foss)
Any afternoon (except WS) 1:05-4:05

2. Lettering.—A training in engineering lettering and title making. Open to all students, and required of those whose major is in Civil, Mechanical, Electrical, or Chemical engineering, or in Geology and Mining.

1 unit, autumn, *winter, and *spring quarters (Foss)
Any afternoon (except WS) 1:05-4:05

3. Descriptive Geometry.—Embracing that part of the subject relating to points, lines, and planes. Open to students who have completed or are taking solid geometry and Engineering 1 and 2, and required of students whose major is in Civil, Mechanical, Electrical, or Chemical Engineering, or in Geology and Mining.

3 units, autumn quarter (Foss)
Rec. TTh 8 or 10; Dft. M or T or Th or F 1:05-4:05

4. Descriptive Geometry.—Embracing that part of the subject relating to curved surfaces, their tangent planes, intersections, and development. Prerequisites: Engineering 1, 2, and 3. Required of students taking their major in Civil, Mechanical, Electrical, or Chemical Engineering.

3 units, winter quarter (Foss) Rec. Th 8 or 10; Dft. MT or ThF 1:05-4:05

5. Descriptive Geometry.—Warped surfaces, shades, shadows, perspective, and isometric drawings. Prerequisite: Engineering 4. Required of students taking their major in Civil Engineering.

3 units, spring quarter (Foss)
Dft. any three afternoons (except WS) 1:05-4:05

10. Applied Mechanics.—(*a*) Lectures and recitations. Strength and elastic properties of the ordinary materials of engineering construction. Simple tension, compression, and shear. Flexure, with application to simple, continuous, and non-homogeneous beams. Long columns, torsion, repeated stress, sudden stress, and resilience. (*b*) Laboratory: Testing strength and elastic properties of materials and structures. Open to students who have completed first- and second-year courses for engineering students in Applied Mechanics; required of all students having engineering as major subject.

5 units, autumn quarter (Moser)
Lec. MWF 9; Lab. MWF 10-12, or MT 1:05-4:05, or ThF 1:05-4:05

11. Applied Mechanics.—Continuation of Engineering 10.

5 units, winter quarter (Moser)
Lec. MWF 9; Lab. MWF 10-12, or MT or ThF 1:05-4:05

12. Hydraulics.—(*a*) Lectures and recitations. Fluid pressure and equilibrium, flow of water through orifices, over weirs, in open and closed conduits. (*b*) Laboratory. Calibration of instruments. Measurement of pressure, velocity, and flow and friction loss of water under various conditions. Prerequisite: Engineering 11.

5 units, spring quarter (Moser) Lec. MWF 9; Lab. MWF 10-12, or MT 1:05-4:05

[Note.—See also Hydraulic courses listed under Mechanical Engineering.]

Laboratory Fees.—Courses 3, 4, and 5, $1 each; 10 and 11, $2 each; 12, $4.

CIVIL ENGINEERING

Charles David Marx, †Charles Benjamin Wing, Leander Miller Hoskins, John Charles Lounsbury Fish, Professors.
John Harrison Foss, Charles Moser, Assistant Professors.

A. Topographic Engineering

20. Elementary Surveying.—Recitations: Telescope, vernier, magnetic needle, bearings, azimuth, deflections; latitude and departure, area by double longitude and by coördinates; stadia, transit lines, locating details; staking out buildings, earthwork computations, stadia topography. Field work: Exercises with tape, transit, and level; pacing and compass survey of field, transit and tape survey of field; transit and tape traverse, stadia traverse, differential and profile levels, stadia topography. Office work: Reducing and plotting field notes and computing areas. Open to students who have completed or are taking Engineering 1 and 2 and have a working knowledge of elementary plane geometry and trigonometry.

5 units, autumn quarter (Fish) Rec. Th 9; Dft. and Field MTW (or WThF) 1:05-4:05, and 3 hours T forenoon or by arrangement.

21. Advanced Surveying.—Recitations: Base lines, triangulation, trigonometrical leveling, plane table, topographic surveying, topographic cross-sections, earthwork cross-sections and volumes, topographic projection, sun observations, circular curves, land surveys and resurveys, adjustment of transit and level. Field and office work: The exercises in field and drafting room will cover, as thoroughly as time permits, the ground specified under Recitations. Prerequisite: C. E. 20 or its equivalent. Required of students who take their major in Civil Engineering or in Geology and Mining.

5 units, winter quarter (Fish) Rec. Th 9; Dft. and Field MTW (or WThF) 1:05-4:05, and 3 hours T forenoon or by arrangement.

†Absent on leave, 1917-18.

23. Special Surveying.—Courses arranged to meet special needs of individuals. (Field work, excepting sun observations, can be done only when two or more students elect to pursue the same work.) Open only by permission.

1, 2, or 3 units, autumn, *winter, and *spring quarters (Fish) By arrangement

B. Engineering Economics

30. Engineering Economics.—The problem of economic selection, interest, sinking funds, first cost, salvage value and depreciation, elements of cost of service (including amortization), methods of estimating, basis of economic comparison, procedure in economic selection. (Written recitations and problems.)

3 units, spring quarter (Fish) Rec. MWF 8

31. Engineering Estimates and Reports.—Each student is assigned the problem of choosing a structure for a stated service. He makes preliminary plans and estimates in connection with two or more structures proposed for the stated service, makes an economic comparison based on the estimated costs, and prepares a report on the object, conditions, methods, and result of his investigation. The object of the course is to offer training in analyzing problems of choosing structures, in the logical planning of the steps of an engineering investigation, in the execution of the steps (including use of references, of cost data, of methods of estimating, and arrangement and record of computation), and in the elements of report writing. Roughly, one-third of the time is devoted to looking up references, one-third to drawing and computing, and one-third to writing and revising the report. Open to those who have completed Civil Engineering 30, and to others by permission.

1 to 5 units, autumn, *winter, and *spring quarters (Fish) By arrangement

C. Railroad Engineering

40. Railroad Surveying. Recitations: Curves, turnouts, preliminary and location surveys, earthwork. Field and office work: Preliminary survey, profile, and topographic map; paper location, profile, and quantities; field location, profile levels, and earthwork cross-sections; profile, cross-sections, and volumes from field location; distribution of material with use of mass curve; overhaul computation. Prerequisite: Civil Engineering 21, or its equivalent. Required of all who are taking Civil Engineering as major.

5 units, spring quarter (Fish) Rec. Th 9
Dft. and Field MTW (or WThF) 1:05-4:05, and 3 hours T forenoon or by arrangement.

41. Railroad Construction.—Field or office work assigned to individuals, according to their needs, along one or more of the following lines: (1) Supplementary work on simple, compound, and spiral curves, turnouts, connecting tracks, cross-sections, quantities, classification, distribution. (2) Excavating methods and plants. (3) Situation and drainage surveys; preliminary plans and estimates; choice of structure and site; working drawings; staking out; inspections; estimates of work done. (4) Collecting, recording, and filing information; computations and drawings; instructions and reports. A formal, written, detailed report is required on each engineering problem assigned. Open, by permission, to students who have completed Civil Engineering 40 or its equivalent.

1 to 5 units, autumn, *winter, and *spring quarters (Fish) By arrangement

42. Railroad Location.—Locomotive tractive force and resistances thereto, velocity profile, momentum grade. Traction problems involving inter-relation of train weight, grade, speed, and characteristics of locomotive. Value of change in distance, curvature, rise and fall, and ruling grade, based on analysis of operating expenses. Pusher grades, balanced grades for unequal traffic and for adjacent divisions. Prerequisites: Civil Engineering 30 and 40.

3 units, winter quarter (Fish) By arrangement

D. Structural Engineering

50. Elements of Design.—(1) Materials (see under Metallurgy 1). (2) Analytical and graphical determination of stresses in simple structures. (3) Investigation of distribution of stresses in structural details. Open to students who have completed Engineering 1, 2, 3, 4, and have taken or are taking Engineering 10 and 11 and Metallurgy 1. Required of all students taking their major in Civil Engineering.

3 units, autumn quarter (Moser) WThF 1:05-4:05

51. Elements of Design.—(1) Wood, stone, brick, limes, cement, etc., studied from engineering standpoint. (2) Bearing power of soils, distribution of pressure, and similar details of design of simple foundations. (3) Designs, working drawings, bills of materials, and estimate of cost of some simple structure, such as a mill building or highway bridge. (4) Testing physical properties of cement and other masonry materials. Prerequisite: Civil Engineering 50. Required of all students taking their major in Civil Engineering.

3 units, winter quarter (Moser) Dft. and Lab. WThF 1:05-4:05

52. Elements of Design.—This course completes the work undertaken in Civil Engineering 51.

3 units, spring quarter (Moser) Dft. and Lab. WThF 1:05-4:05

53. Elements of Design.—A short course to meet the requirements of students taking their major in Mining, Mechanical, Electrical, or Chemical Engineering. Special applications are made to hoisting and conveying structures, mill buildings, and central station buildings. Prerequisites: Engineering 1, 2, 3, 4, 10, and 11, and Metallurgy 1.

3 or 4 units, quarter by arrangement (Wing) [Not given in 1917-18.]

54. Structural Design.—Determination of stresses in modern types of bridges, including cantilever and swing spans, masonry arches, and arch ribs; discussion of most economical types, spans and dimensions of bridges and bridge members; study of methods of constructing subaqueous foundations, shop methods, erection, inspection of material, specifications, and other factors influencing the design of structures. Designs are made by each student to fulfill actual conditions. Prerequisite: Civil Engineering 52.

5 units, autumn quarter (Wing) [Not given in 1917-18.]

55. Structural Design.—Continuation of Civil Engineering 54.

5 units, winter quarter (Wing) [Not given in 1917-18.]

56. Structural Design.—Continuation of Civil Engineering 55.

3 units, spring quarter (Wing) [Not given in 1917-18.]

E. Hydraulic Engineering

60. Water-Supply Engineering. Sources of supply. Collection and storage of water for water supply of towns or for irrigation. Settling, filtering, conducting, and delivering of water, including the study and design of all accessory works. Prerequisites: Engineering 3, 4, 10, 11, and 12, and Civil Engineering 41 and 52.

10 units, autumn quarter (Marx) Lec. MTWThF 10; Dft. MTWThF 1:05-4:05

61. Water-Supply Engineering.—Continuation of Civil Engineering 60.

10 units, winter quarter (Marx) Lec. MTWThF 10; Dft. MTWThF 1:05-4:05

62. Water-Supply Engineering.—Continuation of Civil Engineering 61.

5 units, spring quarter (Marx) Lec. MWF 10; Dft. MT 1:05-4:05

63. Sanitary Engineering. Including sewerage of towns and drainage of lands. Special attention will be given to the study of all municipal sanitation problems, such as removal of sewage, destruction of

garbage, construction, maintenance, and sweeping of streets and pavements. Prerequisite: Civil Engineering 62.

10 units, spring quarter (Marx) By arrangement

64. Construction of Canals, River and Harbor Improvements.—Lectures and designing as per arrangement. Prerequisites: Engineering 12 and Civil Engineering 41 and 52.

3 units, autumn, *winter, and *spring quarters (Marx) By arrangement

65. Technical Seminary.—Study of German and French technical journals. Open only to fourth-year students in Civil Engineering.

3 units, autumn, *winter, and *spring quarters (Marx) By arrangement

ELECTRICAL ENGINEERING

Harris Joseph Ryan, Professor
James Cameron Clark, Assistant Professor.
†Fred S. Mulock, Henry Harrison Henline, Instructors.

[With the coöperation of Associate Professor Moreno of the Department of Applied Mathematics.]

The department offers courses of instruction for three groups of engineering students.

I. General Group.—Course 1, Electricity in Engineering, is offered especially for fourth-year students in civil, mining, and chemical engineering without prerequisites.

II. Dynamic Group.—Courses 2 (Electrical Energy), 3 (Electrical Machinery), and 4 (Electrical Engineering—General Practice), with Physics 6 and 9 as prerequisites, are open to all third- and fourth-year students and are offered especially for students in mechanical engineering.

III. Electrotechnic Group.—The department admits as major students only those who have been granted the Stanford A. B. degree in engineering and who have completed the department's courses 2, 3, 4, and 5, and those graduates of other institutions who present corresponding credits. Major students are recommended for the degree of Engineer in Electrical Engineering upon satisfactory completion of Electrical Engineering courses 6, 7, 10, and 11, Physics 18, and Applied Mathematics 8 (39 units), and electives as approved (6 to 15 units); total, 45 to 54 units.

† Absent on leave, 1917-18.

1. Electricity in Engineering.—An abridged course in the industrial applications of electricity, intended for non-electrical engineering students. Prerequisites: first seven quarters of any of the Stanford Engineering curricula.

5 units, winter quarter (CLARK) Lec. MWF 11; Lab. TW 1:05-4:05

2. Electrical Machinery.—A laboratory course in the characteristic technology of magnetic, electric, and electrostatic phenomena, introductory study of meters, transformers, machines, and auxiliaries. Prerequisites: Applied Mathematics 1, 2, 3; Engineering 1, 2, 3, 4, 5; Mechanical Engineering 11, 13*a*, 13*b*; Physics 6*a*, 6*b*, 6*c*, 6*d*.

2a. Recitations.

2 units, winter and spring quarters (MULOCK) MW 11

2b. Laboratory Work.

3 units, winter and spring quarters (CLARK, MULOCK) MThF 1:05-4:05

[Course 2 is supplemented by Physics 6*d*, laboratory work in electrical measurements, 2 units, autumn quarter.]

3. Electrical Machinery.—A laboratory course in the characteristic performance of standard electrical machinery and auxiliary apparatus. Prerequisite: E. E. 2*a*, 2*b*.

4 units, autumn quarter (CLARK, MULOCK)

4. Electrical Engineering.—A lecture course in *general practice*: (1) Standardization authorized by the A. I. E. E. (2) Fire Hazard, National Electrical Code. (3) Transmission Economies. (4) Standard Machinery, Auxiliaries, and Structural Supplies. (5) Municipal Distribution of Electricity for Miscellaneous Service. (6) Long Distance Transmission of Power for General Purposes. (7) Discussion of Typical Installations. (8) Elements of Finance Controlling the Uses of Electricity. (9) Survey of Electrical Industries. (10) Historical and Biographical Sketches. Prerequisite: E. E. 3.

3 units, winter quarter (RYAN) MWF 8

5. Electric and Magnetic Circuits.—Class work: essentially a problem course. Prerequisites: E. E. 3 and 4.

3 units, spring quarter (CLARK) MWF 11

6. Electrical Engineering Technology.

Lecture Courses.—Properties of materials of construction and technical study of machinery, transformers, transmission lines, distributing systems and auxiliaries. Prerequisites: E. E. 4 and 5.

a'. Machinery.

3 units, autumn quarter (CLARK) By arrangement

a''. *Transmissions.*

3 units, autumn quarter (RYAN) By arrangement

Laboratory Courses.—Materials tests; machinery and auxiliaries design data and acceptance tests; special meter performance tests and calibrations.

b'. Meters.
2 units, autumn quarter (Henline) By arrangement

b''. Machinery.
2 units, autumn quarter (Clark) By arrangement

b'''. Transmissions.
2 units, autumn quarter (Ryan) By arrangement

7. Advanced Electrotechnics.—A course developed with particular reference to the study of the problems of long distance transmission of energy. Lectures and problems. Prerequisites: E. E. 2, 3, 4, 5, and 6, and Applied Mathematics 8.
4 units, winter quarter (Ryan, Moreno) MTWTh 10

The course is given with the coöperation of the departments of Physics and Applied Mathematics, the following officers of instruction participating. Rogers (Physics); Moreno (Applied Mathematics); Clark (Electrical Machinery); Ryan (Electrical Transmissions).

8. Electrical Engineering Practice.—Guidance for the individual in the study of the Transactions of the American Institute of Electrical Engineers and other literature of practice. Prerequisites: E. E. 6 and 7.
5 units, spring quarter (Ryan)

10. Seminary.—A weekly conference for the discussion of current electrical engineering literature and of special topics. Prerequisites: E. E. 4 and 5.
1 unit, autumn, winter, and spring quarters (Ryan) By arrangement

11. Thesis.—Subjects as approved to suit the needs of the individual. Prerequisites: E. E. 4 and 5.
4 units, winter quarter; 5 units, spring quarter (Ryan, Clark, Mulock)

The Stanford Branch of the American Institute of Electrical Engineers is an organization authorized by the Institute and maintained by the members of the graduating class for the discussion of the Proceedings of the Institute, and of other topics as assigned, and the review of current electrical literature.

Laboratory Fees—$1 per unit of university credit.

Syllabus Fees—Applicable to syllabus, lantern slides, and charts, 50c to $1 per course-section.

MECHANICAL ENGINEERING

†William Frederick Durand, Guido Hugo Marx, William Rankine Eckart, Professors.

Everett Parker Lesley, Associate Professor.

Charles Norman Cross, Lawrence Edminster Cutter, Assistant Professors.

Edward John Stanley, James Bennett Liggett, Theron James Palmateer, Robert Henry Harcourt, Horatio Ward Stebbins, Instructors.

The following courses constitute the required work of a five years' curriculum leading to the degree of Mechanical Engineer. Students successfully completing the first four years of this curriculum with sufficient additional grade points for graduation will be granted the degree of Bachelor of Arts. It is expected that the supplementary courses necessary in order to obtain the number of grade points required for graduation will be elected in considerable degree among the other engineering courses offered in the department.

First Year—Applied Mathematics 1 (10 units); Applied Mathematics 2 (5); Chemistry 1, 3, and *b* (9); Machine Sketching, M. E. 11 (3); Shopwork, M. E. 1 and 3, (8); Industries, M. E. A., (3).

Second Year—Applied Mathematics 2 (5 units); Applied Mathematics 3 (10); Physics *6a* and *6b* (8); Linear Drawing and Lettering, Engineering 1 and 2 (2); Descriptive Geometry, Engineering 3 and 4 (6); Elementary Machine Drawing, M. E. 12 (3).

Third Year—Applied Mechanics, Engineering 10 (5 units); Elementary Hydraulics, Engineering 12 (5); Physics *6c* and *6d* (8); Metallurgy 1 (3); Shopwork M. E. 6 (4); Machine Design, M. E. 13 (8); Electrical Machinery, E. E. *2a* and *2b* (10).

Fourth Year—Heat Engines, M. E. 32, 33 (8 units); Technical Reports, M. E. 31 (3); Mechanical Laboratory, M. E. 23 (3); Machine Design, M. E. 14 (8); Electrical Engineering, E. E. 3 and 4 (7); Shopwork, M. E. 7 (4).

Fifth Year—Shop Administration, M. E. 10 (4); Advanced Machine Design, M. E. 16 (4); Mechanical Laboratory Work, M. E. 24, 25 (6); Applied Thermodynamics, M. E. 34 (3); Central Power Stations, M. E. *35a* (3); Hydraulic Machinery and Power Stations, M. E. *35b* (5); Pumping Machinery, M. E. 36 (3).

† Absent on leave, 1917-18.

The above courses represent the requirement for the student entering with full entrance credit including Higher Algebra, Solid Geometry, Trigonometry, High School Chemistry, and Woodworking. For those not bringing this measure of entrance credit the requirements will be correspondingly greater. There will be, in the usual case and especially for the student permitted to carry more than the normal number of 15 units registration, a considerable amount of additional time available for elective work in the various engineering departments, or in other departments of the University.

COURSES OFFERED

A. General Survey of Engineering Industries.—Special lectures and assigned topics. Required of first-year students.

1 unit, each quarter — By arrangement

1. Forge Practice.—Three laboratory periods and one lecture per week. Required of Mechanical Engineering students.

4 units, winter, *spring, and *summer quarters (HARCOURT) — Lec. S 9

3. Foundry Practice.—Three laboratory periods and one lecture per week. One quarter (4 units) required of Mechanical Engineering students.

4 units, autumn, *winter, and *spring quarters (LIGGETT) — Lec. S 9

5. Woodworking (prerequisite for M. E. 6).—Three laboratory periods per week. One quarter (3 units) required of students not having entrance credit in woodworking.

3 units, autumn, *winter, and *summer quarters (STANLEY)

6. Pattern Making.—Three laboratory periods and one lecture per week. One quarter (4 units) required of Mechanical Engineering students.

4 units, autumn, *winter and *summer quarters (STANLEY) — Lec. S 8

7. Elementary Machine Shop Practice.—Two laboratory periods and two lectures per week. Intended for upperclassmen only. One quarter (4 units) required of Mechanical Engineering students. Prerequisites: M. E. 1 and 3.

4 units, autumn, *spring, and *summer quarters (PALMATEER) — Lec. TS 9

8. Advanced Machine Practice.—One to four laboratory periods per week. Prerequisite: M. E. 7.

1 to 4 units, autumn, *spring, and *summer quarters (PALMATEER)

10. Shop Administration.—A course of lectures on workshop organization and administration, factory accounting, wage systems, selection of machinery, factory methods, etc. Prerequisites: courses 1 to 7 inclusive.

4 units, winter quarter (LESLEY) — MTWTh 10

11. Freehand Machine Drawing.—Practice in making freehand sketches of machine parts, and their dimensioning in practical form for use in the shop, the sketches being made according to the principles of orthographic projection. The aim is to train the student in the reading of machine drawings through making a considerable number of sketches from actual machines and machine parts, and at the same time to familiarize him as much as possible with the actual machine parts. Open to all students, and required of students in Mechanical Engineering. (Nine hours a week.)

3 units, winter, *spring, and *summer quarters (CUTTER)
TTh 1:05-4:05; S 9-12

12. Elementary Machine Drawing.—Practice in making working drawings of machine parts, and in making tracings from these drawings. The purpose of the course is not only to train the student in the technique of drafting and dimensioning, but also to familiarize him with the elements of machines, and, therefore, no drawings are made from copy, but all are made from the student's own sketches of the actual model. (Six or nine hours a week in drafting room; three hours work for one unit credit.) Prerequisite: courses 1, 2, and 3 in Engineering, or their equivalents; and, for Mechanical Engineering students, course 11 in Mechanical Engineering.

2 or 3 units, winter, *spring, and *summer quarters (CUTTER)
MWF 1:05-4:05

13. Elementary Machine Design.

a. Function of machines; motion, force, and work in machines; analysis of mechanisms; velocity, acceleration, and effort diagrams; parallel motions; cams; ratchets; toothed wheels; valve gear analysis and design. The aim is, not merely to present a course in pure mechanism, or kinematics, but also—by the introduction of the consideration of force, work, and energy, as well as motion—to show the purposes for which the mechanisms are used and the manner in which they function. (Three hours a week, lectures and recitations, winter and spring quarters.) (3 units.)

b. Drafting course applying the principles treated in *a.* (Three hours a week drafting, winter and spring quarters.) (1 unit.)

Prerequisites: course 12 in Mechanical Engineering and courses 1, 2, 3, and 4 in Engineering. Courses *a* and *b* must be taken together and are required of students in Mechanical Engineering.

4 units, winter and spring quarters (G. H. MARX)
Lec. MWF 8; Drafting W 1:05-4:05

14. Machine Design.—Study of machine elements, such as bolts and screws; riveted joints and boiler design; keys, fits and fitting; axles,

shafts, and spindles; journals, bearings, friction, and lubrication; ball and roller bearings; sliding surfaces; couplings and clutches; gear, belt, rope, and chain transmission systems; flywheels; brakes; springs; frames and supports; cylinders, etc.; leading to the design of complete simple machines. (Two hours a week recitations and lectures, six hours in the drafting-room, throughout the year.) Open to students who have completed course 13 in Mechanical Engineering, and who are taking courses 10 and 11 in Engineering; two quarters required of students in Mechanical Engineering.

4 units, autumn, winter, and spring quarters (G. H. Marx)
Lec. TTh 8; Dft. TTh 1:05-4:05

15. Machine Design.—An abridged treatment of the field covered in courses 13 and 14. (Three hours a week recitations and lectures, six hours a week in the drafting-room, first quarter.) Open to students who have completed Engineering 3 and 4, Mechanical Engineering 12, and are taking Engineering 10. Intended for Engineering students whose major subject is not Mechanical Engineering. [Not given in 1917-18.]

5 units, autumn quarter (G. H. Marx) Lec. MWF 8; Dft. MW 1:05-4:05

16. Advanced Machine Design.—Design of complete machines. Students may elect machine tools, cranes, steam or gas engines, or special problems. (One lecture and nine hours drafting per week.) Intended for fifth-year students who have completed courses 14, 32, and 33.

4 units, summer and *autumn quarters (G. H. Marx, Cutter)
Lec. F 10; Dft. 1:05-4:05 by arrangement

21. Valuation of Fuels and Oils for Engineering Purposes.—Includes determinations of the proximate analysis of coal; the calorific value of coals, fuel oils, and gas; the moisture contents of fuel oils; the density, viscosity, flash, burning, and chill points of oils, and the coefficient of friction of lubricated bearings. (One lecture, three hours in the laboratory, and five hours on reports per week.)

3 units, autumn quarter (Cross) Lec. F 8; Lab. 1:05-4:05 by arrangement

22. Calibration and Use of Engineering Instruments.—Including thermometers, gas and steam meters, planimeters, steam engine indicators, absorption brakes, transmission dynamometers, steam calorimeters, and speed indicators. (One lecture, three hours in the laboratory, and five hours on reports per week.)

3 units, autumn and *winter quarters (Cross)
Lec. Th 9; Lab. 1:05-4:05 by arrangement

23. Testing of Engines, Boilers, and Compressors.—Includes valve setting, mechanical efficiency, and economy tests of steam engines, tests of steam turbines, gas engines, boilers (including flue gas analysis),

and air compressors. (One lecture, three hours in the laboratory, and five hours on reports per week.)

Open only to students who have completed M. E. 32 (the first quarter of Heat Engines, 4 units); required of students in Mechanical Engineering. It is very desirable that this course be preceded by M. E. 21 and 22, and it is expected of those who intend to do advanced experimental work.

3 units, winter quarter (for majors other than M. E.), and spring quarter (for M. E. majors) (Cross) Lec. Th 9; Lab. 1:05-4:05 by arrangement

24. **Testing of Hydraulic Machinery.**—Includes tests of centrifugal rotary, jet and steam pumps, pulsometers, hydraulic rams, water wheels and hydraulic turbines. (One lecture, three hours in the laboratory, and five hours on reports per week.) Open to students who have completed Engineering 12*b* and M. E. 23.

3 units, autumn quarter (Eckart) Lec. Th 8; Lab. 1:05-4:05 by arrangement

25. **Testing of Power Plants and Auxiliaries.**—Includes tests of feed water heaters, economizers, condensers, injectors, blowers, turbo-compressors, refrigerating machinery, and a complete power plant test. (One lecture, three hours in the laboratory, and five hours on reports per week.) Open to students who have completed M. E. 23 and 24.

3 units, winter quarter (Eckart) Lec. T 8; Lab. 1:05-4:05 by arrangement

26. **Advanced Heat Engine Testing.**—Includes valve-setting and equalizing loads of cross compound engines, thermal efficiency tests, Hirn's analysis, and speed regulation of engines, automobile tests, etc. (One lecture, three hours in the laboratory, and five hours on reports per week.) Open to students who have completed M. E. 23, 24, and 25.

3 units, spring quarter (Eckart) Lec. T 9; Lab. 1:05-4:05 by arrangement

28. **Aerodynamic Laboratory.** Experimental investigation of airplane propellers.

2 units, winter quarter (Lesley) By arrangement

29. **Experimental Investigation of Petroleum Engineering Problems.**

3 to 6 units, autumn, winter, and spring quarters (Eckart) By arrangement

30. **Experimental Investigation of Mechanical Engineering Problems.**—Open to all students who have completed M. E. 21, 22, and 23 and whose work has indicated their ability to carry on successfully advanced work of this nature.

3 to 6 units, autumn, winter, and spring quarters (Eckart) By arrangement

31. **Engineering Reports and Specifications.** Practice writing, with occasional lectures. Required of fourth-year students in Mechanical Engineering.

3 units, autumn and *winter quarters (Lesley) Lec. TTh 9

32. Heat Engines.—Mechanical theory of heat and its applications. Fourth-year students in Mechanical Engineering.

4 units, autumn quarter (STEBBINS) Lec. MWF 10; office work as arranged

33. Heat Engines.—Continuation and application of course 32. (Three lectures and three hours' office work per week.) Required of fourth-year students in Mechanical Engineering.

4 units, winter quarter (STEBBINS) Lec. MWF 10; office work as arranged

34. Applied Thermodynamics.—Continuation of courses 32, 33. Irreversible operations, flow of gases and vapors, design of turbine nozzles. Application of thermodynamic theory to advanced and special problems. Prerequisite: Course 32. Required of fifth-year students in Mechanical Engineering. (Two lectures and three hours' office work per week.)

3 units, spring quarter (STEBBINS) Lec. MWF 10; office work as arranged

35. Central Power Stations.—Study of the principal problems presented by the design and operation of modern central power stations driven by heat prime movers. (Two lectures and three hours' office work per week.)

3 units, autumn quarter (STEBBINS) Lec. TTh 9; office work as arranged

35b. Hydraulic Machinery and Power Stations.—Elements of hydraulic machinery with special reference to prime movers and centrifugal pumps. Elements of the design of hydraulic power stations with special reference to modern hydroelectric practice; general control of water in tunnels and penstocks, surge chamber, control of surges and shocks, valves and regulating devices, penstocks and their installation, selection of units, characteristics of impulse and reaction types, speed regulation, installation tests, and special problems. Prerequisite: Engineering 12. (Four lectures and three hours' office work per week.)

5 units, spring quarter (ECKART, STEBBINS) Lec. MTWTh 9; office work as arranged

36. Pumping Machinery.—Discussion of the principal problems arising in the design and operation of pumping machinery of various types, direct, centrifugal, rotary, propeller; and for various purposes, general service, boiler feed, fire service, mine drainage, irrigation, municipal supply, oil line service, etc. (Two lectures and three hours' office work per week.) Prerequisites: M. E. 32 and Engineering 12.

3 units, winter quarter (STEBBINS) Lec. TTh 9; office work as arranged

FEES: Courses 1, 3, 7, $8.00 each; courses 5, 6, $6.00 each; course 8, $2.00 per credit hour; courses 21, 22, 23, 24, 25, 26, $4:00 each; courses 29, 30, $1.50 per credit hour; course 35, 50c.

ENGLISH

[2]William Herbert Carruth, Raymond Macdonald Alden, [2]John S. P. Tatlock, Professors.

Lane Cooper, Frederick Morgan Padelford, Acting Professors (summer quarter).

[2]Lee Emerson Bassett, [1]Henry David Gray, William Dinsmore Briggs, Associate Professors.

†Samuel Swayze Seward, Jr., Howard Judson Hall, †Everett Wallace Smith, †Theresa Russell, Assistant Professors.

Edith Ronald Mirrielees, †Frank Ernest Hill, †Elisabeth Lee Buckingham, Arthur Garfield Kennedy, George Fullerton Evans, Ural N. Hoffman, Karl Elias Leib, Harriet Bradford (Dean of Women), Instructors.

Margery Bailey, Perle Shale Kingsley, Gertrude Roberts Sherer, Albert Ames Bennett, Florence Yost Humphries, Noel Hudson Stearn, Assistants in Instruction.

Robert Luther Duffus, Lecturer in Journalism.

Requirements for the Degree of Bachelor of Arts

a. The courses ordinarily prescribed in the major subject include Chaucer, Shakespeare, the advanced courses (81, 82, 83, 84) in the History of English Literature (four quarters), and an advanced course in a single author (as Milton, Wordsworth, or Spenser), besides such preliminary courses in composition, vocal expression, or literature as may be advised in individual cases. In the advanced courses in English Literature one of two substitutions may be made: (*a*) for course 82, the course in Elizabethan Drama; or (*b*) for course 83, the course in Modern English Fiction (68). (Students making English their major subject in preparation for journalism may substitute for two of the advanced courses in literature appropriate courses in some other subject, with the approval—to be obtained in advance—of their adviser.)

b. It is required also that each student pursue work in one foreign language and literature sufficiently for the accomplishment of two ends, (1) a practical reading knowledge of the language chosen, and (2) some acquaintance with its most important literature. This requirement is not primarily a matter of formal credit-hours, but will ordinarily be found to demand a minimum of 24 units of college work in the chosen language, aside from elementary courses (two years in the

[1] Absent on leave for the autumn quarter; [2] for the winter quarter; † for the year.

high school or one in the University). Students should be sure that their language studies are so planned as to accomplish the ends desired. (Introductory courses in Latin and Greek, if pursued in the University, will be counted as college work. Those who make Latin or Greek their principal language are advised, in general, to include two years of work in a modern language among their elective studies; and those who have chosen a modern language are encouraged to include among their elections two years of work in Latin or Greek.)

c. A course in English History is also prescribed for those who have not had a separate course in the subject in the high school.

The Teacher's Recommendation.—The High School Teachers' Certificate is granted by the State to students who have fulfilled the State requirements as set forth on pages 90-92 of the *Register*. Recommendation by the department is granted by vote to students whose work has been of high character. It should be distinctly understood that a mere passing grade does not entitle a candidate to the endorsement of the department. The undergraduate courses prescribed are, in addition to a reading knowledge of at least one foreign language, Composition, Shakespeare, Chaucer, Versification, English Language, Teachers' English, three courses in English literary history, and one course in a literary type. The graduate courses must comprise not less than three units of work for each quarter of study.

Advanced Degrees

The candidate for the Master's degree in English must have: (1) The equivalent of the requirements for the A. B. degree in English; (2) an elementary knowledge of Old English; and (3) a reading knowledge of two foreign languages (preferably one ancient and one modern).

The work for the degree must occupy at least one full year of graduate study in residence, the greater part in English, the remainder in related fields. The courses in English will be divided between literature and philology. The candidate must present a thesis prepared under the direction of a member of the department and demonstrating the candidate's power of concentrated, independent study. This thesis may be accepted in lieu of not more than nine units of the work in course.

For the conditions of acquiring the Doctor's degree, see the Graduate Study Bulletin.

Preliminary and General Courses

[In general, courses 1-15 are open to first-year students; courses 16-30 are open to second-year students.]

A. Elementary Composition.—A one-quarter course required of all first-year undergraduates who do not pass the matriculation test in English.

1 unit, autumn, *winter, and *spring quarters (Bailey, Bradford, Sherer) MWF 8, 9

[For each student in course A, except in case of those who meet the requirement within a short time, a fee of $10 is charged.]

2. English Composition.—Practical work in narration and description, one quarter; in exposition, one quarter. Membership in this course being limited to 180, students are accepted in order of registration up to 5 p. m. of Registration Day (for details, see bulletin board). English majors are expected to enroll in section I, Journalism students in section II (see schedule).

3 units, any two quarters (Carruth, Hall, Mirrielees, Evans, Bailey, Sherer, Stearn) (autumn, winter, spring, 5 sections) MWF 8, 9, 10, 11, TThS 9; (summer) MWF 9

4. Vocal Expression.—A study of the principles of expressive reading, and the vocal interpretation of masterpieces in prose and poetry, with supplementary work in voice development. Each student is expected to memorize and vocally interpret some 350 lines of Shakespeare during the quarter. The course is open to a limited number of students in the order of their application. Application should be made before the first meeting of the class in the quarter, and the instructor reserves the right to refuse to enroll students who do not appear at the first session of the class. Two sections.

4 units, any quarter (Bassett, Kingsley) TWThF 8, 9

5. Reading Aloud.—Practice in the application of the fundamental principles of effective reading to varied types of literature. Prerequisite: Course 4.

3 units, autumn, *winter, and *spring quarters (Kingsley) MWF 9

6. Practical Phonetics.—A course in the enunciation and pronunciation of the English language. Designed especially for foreign students.

1 unit, autumn quarter (Bassett) M 3:05

7. Extemporaneous Speaking. Practice in extemporaneous speaking on subjects of current interest, with some attention to the preparation of speech outlines.

3 units, any quarter (Bassett, Evans, Leib) (autumn, 3 sections) TThS 9, 10, MWF 1:05; (winter, 2 sections) TThS 10, 1:05; (spring, 3 sections) MWF 9, TThS 9, MWF 1:05; (2d term, summer) MTWThF 9

8. Outline History of English Literature. A survey, critical and historical, of English literature in its larger aspects, with readings. De-

signed primarily for first-year English major students who have not taken a high school course in the subject.

5 units, spring quarter (Mirrielees) MTWThF 8

9. American Literature.—General survey of the history of American literature, with reading of selected representative works. Not open to students having entrance credit in the subject.

5 units, winter and *summer quarters (Hall)
(winter) MTWFS 10; (summer) MTWFS 8

10. English Classics.—A study of representative works of great English writers from Malory to Browning, with assigned reading and writing. Open only to first-year students who are not English majors.

5 units, one or two quarters (Mirrielees)
(autumn) MTWThF 10; (winter) MTWThF 9

11. Introduction to Poetry.—A study of the nature, methods, and forms of poetry, with exercises in analysis and interpretation. Open to students of all departments.

5 units, winter quarter (Alden) MTWF 11

13. Free Reading.—Intended to encourage familiarity with books and to supply an opportunity for more general reading. Open to a limited number of students from other departments. Six hours of reading weekly.

2 units, any one or two quarters (Carruth, Alden, Tatlock, Briggs, Hall, Mirrielees, Evans, Bailey, Bradford) By arrangement

14. Tennyson.—A study of selected portions of Tennyson's poems, illustrating the growth of his literary art. A general course, designed for first- and second-year students, and open to third- and fourth-year students by permission only.

4 units, spring quarter (Hall) TWThF 8

16. Advanced Composition.—Including both rapid writing and the preparation of long themes. Prerequisite: Course 2.

4 units, winter and spring quarters (Evans) TWThF 9

17. News Writing.—Structure of the news story, news values, types of news stories, sources of news and methods of gathering, newspaper organization, writing within time and space limits, copy-reading, headline writing, proofreading. Prerequisite: Course 2, or its equivalent.

3 units winter quarter (Hoffman) MWF 11

19a. Vocal Interpretation.—An advanced course in the vocal interpretation of literature. Designed particularly for those who intend to teach English literature. Prerequisite: Courses 4 and 5.

3 units, 1st term, summer quarter (Bassett) MTWThF 9

19b. Vocal Interpretation.—Dramatic Literature. Scenes assigned from Shakespeare and from modern plays of literary merit. Members of the class will vocally interpret characters and scenes assigned for individual study. Prerequisite: Course 19 *a*.

3 units, spring and *summer quarters (Bassett) (spring) MWF 1:05; (summer) MTWThF 9

20. Practical Debate.—Under supervision of the department those students who make the practice squads for any intercollegiate debate may receive credit, upon satisfactory completion of the work.

1 or 2 units, any quarter (Leib) By arrangement

22. Victorian Prose.—A survey of Victorian prose, with special emphasis upon Carlyle, Ruskin, and Arnold. (Course 22 is a half-course with course 23; either may be taken separately.)

3 units, one quarter (———) [Not given in 1917-18.]

23. Victorian Poetry.—A study of selected Victorian poets.

3 units, one quarter (———) [Not given in 1917-18.]

24. English Bible.—Representative portions of the Bible studied as literature, with some consideration of the history and the prose style of the English versions. Not open to first-year students.

4 units, autumn quarter (Alden) MTWF 11

25. Shakespeare.—The first quarter's work consists of a rapid reading of a considerable number of the plays in chronological sequence. The second quarter is devoted to a careful study of three or four plays. Open in the first quarter to all second-year students; in the second quarter to English majors and such others as show special interest and aptitude.

4 units, one or two quarters (Gray, Alden) (winter, spring, summer) MTWF 10

26. Introduction to the Poets of the Nineteenth Century.

2 units, 1st term, summer quarter (Cooper) MTWF 11

27. Browning.

2 units, 2d term, summer quarter (Padelford) MTWF 11

Advanced and Special Courses

[Unless otherwise specified, the following courses are open to third-year and fourth-year students of all departments.]

31. Exposition.—An advanced course. Special attention will be given to students preparing theses or other papers. Prerequisite: Course 2 or equivalent.

3 units, autumn and *summer quarters (Hall) (autumn) MWF 8; (1st term, summer) MTWF 9

32. Argumentation.—The theory of argumentation, with practice in the preparation of briefs and forensics. Open to all students who have made a satisfactory grade in English 2.

2 units, winter and spring quarters (Leib) MW 10

34. Play Construction.—The principles of dramatic writing developed in connection with the student's own work, together with the critical analysis of certain successful plays of the present.

3 units, two quarters (Gray) [Not given in 1917-18.]

35. Prosody and Verse Writing.—Study of lyric poems, with practical exercises in the same. Open also by permission to second-year students who have had six units in English composition.

3 units, spring quarter (Carruth) TTh 3:05

36. Short Story Writing.—Practice in the writing of short stories, and a study of the principles governing their composition. The third quarter, conferences dealing with the construction of the short story, open by permission to students who have completed three quarters of work.

3 units, two or three quarters (Mirrielees) (autumn, winter, spring) TTh 1:05

37. Essay Writing.—Preparation of magazine articles, criticisms, and papers of both informal and analytical character. Prerequisite: Course 2.

3 units, two quarters (Russell) [Not given in 1917-18.]

40. Editorial Writing.—A study of the purpose and power of the newspaper editorial.

5 units, winter quarter (Duffus) MTWThF 8

41. News Analysis.—A systematic study of current news.

2 units, one quarter (Smith) [Not given in 1917-18.]

42. Correspondence.—Instruction and practice in the work of the newspaper correspondent.

3 units, two quarters (Smith) [Not given in 1917-18.]

43. American Journalism.—A survey of the development of journalism, with a study of representative newspapers. (Course 17 a prerequisite.)

5 units, one quarter (Smith) [Not given in 1917-18.]

44. Practical Reporting.—Work on the staff of the *Daily Palo Alto*. Prerequisite: Course 17, or its equivalent.

3 units, autumn, winter, and spring quarters (Hoffman) T 11

45. Editorial Management.—Practical work on the editorial staff of the *Daily Palo Alto*. Prerequisite: Course 44, or its equivalent.

3 units, autumn, winter, and spring quarters (Hoffman) Th 9

46. Advertising.—The aim of this course is to give to students training for Journalism, and to others who expect to go into business, some of the elementary and fundamental principles of advertising. It is intended primarily for juniors and seniors, and should be preceded by the elementary courses in economics and psychology. The ability to write correct, forceful English is a prerequisite.

5 units, spring quarter (HOFFMAN) MTWThF 8

50. Public Speaking.—Practice in the preparation and delivery of speeches adapted to various audiences and occasions, with attention to the style of spoken discourse. Prerequisite: Course 7.

2 units, one or more quarters (BASSETT, LEIB) (autumn) MWF 10; (winter) TThS 10; (spring, 2 sections) MWF 10, TThS 10

51. Public Reading.—A course in the preparation of poems, stories, and scenes from novels and plays for public presentation. Open to a limited number only.

2 units, autumn quarter (BASSETT) M 1:05-3:05

52. Oral Debate.—Practice in the preparation and delivery of oral arguments, chiefly on current public questions. Open to a limited number of students who have had satisfactory experience in public speaking, to be admitted in the order of application.

2 units, autumn, winter, and spring quarters (BASSETT, LEIB) W 2-4

53. Teachers' Course in Oral Expression.

2 units, summer quarter (BASSETT) TTh 2:05

55. Old English. Elements of Old English Grammar with reading exercises.

4 units, winter quarter (KENNEDY) MWThF 10

56. English Language.—An outline study of English in the light of its historical development.

3 units, summer quarter (TATLOCK) MWF 10

58. Chaucer.—An elementary course, including an outline of Middle English Grammar for the beginner. Open to third-year students who have a reading knowledge of one foreign language.

3 or 4 units, autumn and *summer quarters (KENNEDY, TATLOCK) (autumn) MWF 1:05; (summer) MTWF 11

60. Spenser.—Primarily for fourth-year students of the English department.

3 units, spring quarter (BRIGGS) MWF 10

61. Milton.

3 units, one quarter (BRIGGS) [Not given in 1917-18.]

62. Wordsworth.

3 units, autumn quarter (HALL) MWF 9

65. Introduction to Comparative Literature.—An exposition of the comparative method in literary study, with a survey of the distribution of types in world literature. Open to third-year and fourth-year students who have had not less than fifteen units in English literature.

3 units, autumn quarter (CARRUTH) TThS 9

66. National Epics.—Reading in translation of the Mahabharata, the Iliad, the Æneid, the Beowulf, the Song of Roland, the Nibelungenlied, and the Kalewala. Open also to graduates.

4 units, autumn quarter (CARRUTH, MURRAY, FAIRCLOUGH, JOHNSTON, RENDTORFF) TWThF 8

67. The History of Prose Fiction.—Including the beginnings of English fiction to DeFoe.

3 units, summer quarter (CARRUTH) MWF 8

68. English Fiction.—A course in the history of English fiction from DeFoe through the major novelists of the nineteenth century.

5 units, autumn quarter (BRIGGS) MTWThF 10

69. The Modern Novel.—The reading of one novel a week, supplemented by lectures covering additional works of the authors studied and some account of other important novelists of the time.

5 units, winter quarter (GRAY) MTWThF 9

70. The English Drama to 1642.—The beginnings and development of the drama.

5 units, winter quarter (BRIGGS) MTWThF 10

71. The Modern Drama.—A study of certain significant dramas of Ibsen, and of contemporary dramatists.

4 units, one quarter (GRAY) [Not given in 1917-18.]

72. Satire in English Literature.—An analysis of humor and satire (with the emphasis on the latter) both as abstract qualities and as elements of litertaure. Historical survey and study of illustrative examples. Not open to first-year students.

4 units, one quarter (RUSSELL) [Not given in 1917-18.]

80. Old English Literature to 1066.—Survey with lectures and reading in translation.

3 units, one quarter (KENNEDY) [Not given in 1917-18.]

81. Medieval Literature, with special reference to Middle English.—Primarily for fourth-year students of the English department. Special attention is paid to the literary relations of England and the Continent from the Anglo-Saxon period to the sixteenth century. The course will serve as a general introduction to medieval European lit-

erature, which is studied by types: romances, historiès, visions, lyrics, fabliaux, etc. This course is continued in No. 88.
4 units, autumn quarter (Tatlock) MTWF 11

82. English Literature from 1557 to 1700, exclusive of the Drama.—Primarily for fourth-year students of the English department.
4 units, spring quarter (Briggs) MTWF 11

83. English Literature from 1700 to 1780.—Primarily for third-year students of the English department.
4 units, winter quarter (Hall) MTWF 11

84. English Literature from 1780 to 1832.—A continuation of Course 83.
4 units, spring quarter (Alden) MTWF 11

85. English Literature of the Revolutionary Era.—A study of the writings connected with the French Revolution and related movements, with emphasis on ideas rather than literary form. (Not open to major students in English, except by permission; open to other students in the third and fourth years, and to second-year students on recommendation from first-year courses in literature.)
3 units, one quarter (Alden) [Not given in 1917-18.]

[The following courses are open to graduates also.]

87. The Life and Thought of the 16th and 17th Centuries.—For seniors and graduates of all departments.
4 units, autumn and winter quarters (Briggs) M 2:05-4:05

88. Medieval Literature from the Old English Period to the Sixteenth Century.—A continuation of Course 81.
3 units, winter quarter (Tatlock) [Not given in 1917-18.]

90. American Poetry, Exclusive of the Drama. A study of the greater American poets with especial reference to their relation to English and Continental literature.
4 units, spring quarter (Carruth) TWThF 8

93. Beowulf.
4 units, spring quarter (Kennedy, Tatlock) By arrangement

94. Middle English Readings.
3 units, winter quarter (Kennedy) MWF 8

95. The Bible in Early English.
3 units, spring quarter (Kennedy) MWF 9

96. Ballads.
4 units, one quarter (Briggs) [Not given in 1917-18.]

98. Teachers' Course in English.—A study of the methods of teach-

ing Composition and Literature in secondary schools. Open to fourth-year students.

8 units, two quarters, or 5 units, one quarter (Carruth, Alden, Cooper, Humphries) (autumn, winter) S 9-11, W 1:05; (summer) MTWThF 9

99. Versification.—An introduction to the theory of rhythm and meter, the history of English prosody, and the problems of reading and teaching verse. Open to fourth-year students and graduates; to third-year students by special permission.

3 units, autumn quarter (Alden) MWF 10

Graduate Courses

[Open also by consent of the instructor to advanced undergraduates.]

101. Introduction to English Philology and Bibliography.

3 units, autumn and winter quarters (Kennedy) MWF 9

103. Tragedy.—A comparative study of the theory and practice of tragedy in various literatures.

3 units, autumn and winter quarters (Alden) T 10, Th 2:05-4:05

104. Comedy.—An inquiry into the nature of the comic and into its literary uses, as exemplified especially in the drama.

3 units, two quarters (Seward) [Not given in 1917-18.]

105. Elizabethan and Seventeenth Century Lyric.—Special emphasis is laid on the sonnets of Shakespeare and his contemporaries, and on the religious lyric of the age of Herbert.

4 units, summer quarter (Alden) MTWF 11

106. Critical Theories.

3 units, autumn quarter (Seward) [Not given in 1917-18.]

107. Tennyson.—The Idylls of the King compared with their sources.

3 to 5 units, summer quarter (Carruth) TTh 2:05-4:05

108. The Hildebrand Theme in General Literature.—A study of the sources and migration of epic themes.

3 units, autumn quarter (Carruth) T 1:05, F 2:05-4:05

110. Chaucer (advanced course).—Most of the Canterbury Tales will be studied, especially the parts less often read, with attention to the structure and history of the work and its literary significance. Prerequisite: Course 58 or its equivalent. Open to fourth-year students and graduates of other departments. For special outside work an extra credit will be given.

3 units, spring quarter (Tatlock) By arrangement

111. Shakespeare.—An introduction to the bibliography of the subject, the history of the text, and methods of critical study.

4 units, one quarter (Alden) [Not given in 1917-18.]

112. Shakespeare.—A critical study of one or two plays.
2 units, 2d term, summer quarter (Padelford) MTWF 10

113. Marlowe.
4 units, spring quarter (Briggs) M 2:05-4:05

114. Jonson.
4 units, two quarters (Briggs) [Not given in 1917-18.]

117. Journal Club.—Reports on current literature by the members of the course.
2 units, spring quarter (Carruth) TTh 2:05

118a. Early English Seminary.—Layamon.
3 to 4 units, spring quarter (Tatlock) By arrangement

118b. Early English Seminary.—The Troy Story.
3 units, summer quarter (Tatlock) By arrangement

Journalism

The curriculum outlined below is based on the conviction that the best preparation for the journalistic career is the broadest possible college course with a preponderance of English, History, and Economics. The intending journalist will make one of these his major department, in accordance with his inclinations and with the advice of the instructor in journalism and the head of the department. He will be subject to the direction of the major department in conjunction with the instructor in journalism. He will be classified and his diploma marked, if so desired, "English (Economics, History) preparatory to Journalism." Intending journalists are encouraged to compete for opportunities to engage in college journalism and thus to obtain all possible practical experience during their course. When done systematically and under the direction of the instructor in journalism provision is made for a just amount of credit for such work.

A working schedule for a four-years' curriculum may be made up in accordance with the following outline:

(*a*) English (23), Economics (22), History (22), Journalism (23); total, 90 units.

(*b*) Selection from at least five of the following divisions: Biology, Physical Science, Geology, Astronomy, Physiology and Hygiene, Philosophy and Psychology, Sanitary Engineering, Law, Medical Theory, Education; total, 45 units.

(*c*) Margin to complete requirements of major department, and for free choice, 45 units.

Comparative Literature

The following courses offered by the various departments of literature in the University pursue the comparative method and contribute to a survey of the literature of the world and the relations of the several literatures to one another. English majors are advised to elect as many as possible of these courses. Detailed description and the conditions of election are given under the respective departmental announcements.

Introduction to Comparative Literature. [English 65.]
The English Bible. [English 24.]
Greek Literature. [Greek 21 and 22.]
Latin Literature. [Latin 32.]
Early English and General Medieval Literature. [English 81, 88.]
History of German Literature. [German 81.]
The Revolutionary Era. [English 85.]
The 18th Century. [English 83 and 84.]
The Victorian Era. [English 22 and 23.]
National Epics. [English 66.]
The Greek Epic. [Greek 18.]
The Hildebrand Theme. [English 108.]
Dante and the Divine Comedy. [Romanic Languages C 51.]
Chaucer. [English 58 and 95.]
Tennyson: the Sources of the Idylls of the King. [English 107.]
The History of Prose Fiction. [English 67.]
English Fiction. [English 68.]
The Modern Novel. [English 69.]
Development of the German Novel. [German 87.]
The French Novel in the 19th Century. [Romanic Languages A60]
The Development of Tragedy. [English 103.]
Comedy. [English 104.]
Greek Tragedy. [Greek 19.]
Roman Comedy. [Latin 10.]
The English Drama to 1642. [English 70.]
The Modern Drama. [English 71.]
Origins of the Spanish Theater. [Romanic Languages 27.]
Development of the German Drama. [German 86.]
The French Drama in the 19th Century. [Romanic Languages A61.]
Ballads. [English 96.]
The English Lyric. [English 105.]
Development of Lyric Poetry. [German 88.]

Latin Seminary: Epic Poetry. [Latin 22.]
Greek Sculpture. [Greek 26.]
Roman Art and Archaeology. [Latin 31.]
History of German Civilization. [German 137.]
Life and Thought of the 16th and 17th Centuries. [English 87.]
American Poetry in Relation to European. [English 90.]

ENTOMOLOGY AND BIONOMICS

[2]Vernon Lyman Kellogg, Professor.
Rennie Wilbur Doane, Associate Professor.
Mary Isabell McCracken, Assistant Professor.
Gordon Floyd Ferris, Assistant in Instruction.

1a. Elementary Entomology.—An introduction to the study of entomology intended to give the student a general knowledge of the structure, development, and classification of the orders of insects having incomplete metamorphosis. Includes a study of the grasshopper, and a comparative study of representative insects of other groups having similar methods of development. Laboratory and field work, with occasional lectures. Open to all students. (Twelve and one-half hours a week.) (During the autumn quarter of 1917-18, this course was given in two sections, one in the forenoon, the other in the afternoon.)

5 units, autumn, *spring, and *summer quarters (McCracken, Ferris)

1b. Elementary Entomology.—A continuation of Course 1, but not necessarily preceded by it. Includes the study of a beetle as a type of an insect with complete metamorphosis and a comparative study of representative insects of orders having similar methods of development. Open to all students. (During the winter quarter of 1917-18, this course was given in two sections, one in the forenoon, the other in the afternoon.)

5 units, winter and *summer quarters (McCracken, Ferris)

2. Classification of Insects.—This course includes a study of insects in the field and the collection and classification of representatives of as many families as possible. The purpose of the course is to increase the student's knowledge of the insect fauna of this region and to acquaint him with the aims and methods of systematic work. Must be preceded by Course 1*a* or 1*b*.

5 units, spring quarter (McCracken, Ferris) Afternoons

[2] Absent on leave, winter quarter.

3. Insect Ecology.—A study of the structure, habits, and adaptations of a selected group of insects and their relations to their environment. This course offers an introduction to the study of insects for teachers of nature study or high school biology. Open to students who have not had Courses 1 or 2.

5 units, summer quarter (McCracken) Afternoons

4. General Entomology and Insect Adaptations.—A course of lectures and demonstrations. Open to students who have had some work in biology.

3 units, autumn quarter (Kellogg) Lec. MWF 9

5. Insects and Disease.—A discussion of the insects that cause or disseminate some of the diseases in man and the domestic animals. Lectures and demonstrations. Open to students having some previous training in biology.

3 units, winter quarter (Doane) MWF 9

6. Honey-bee and Apiculture. Study of the honey bee; its structure and activities and an introduction to practical bee-keeping through work in a small apiary. Open to students who have had Courses 1 or 2 or their equivalent.

3 units, spring and *summer quarters (McCracken) By arrangement
[Not given spring quarter, 1917-18.]

7. Economic Entomology: Coccidae (the Scale Insects). A study of the classification, general biology, and economic relations of the scale insects, with particular attention to the more important injurious ones of the Pacific Coast. Field, laboratory, and bibliographic work, with occasional lectures. Must be preceded by Courses 1 and 2.

3 units, winter quarter (Doane) MWF afternoons

8. Economic Entomology: Aphididae (the Aphids).—Systematic and biologic studies of the aphids, or plant-lice.

3 units, autumn quarter (Ferris) [Not given in 1917-18.]

9. Economic Entomology: Forest Insects.—A study of the insect enemies of forest and shade trees. The course includes field, laboratory, and bibliographic work. Should be preceded by Course 7.

3 units, autumn quarter (Doane) MWF afternoons

10. Economic Entomology: Orchard and Garden Insects.—A study of the principal injurious and beneficial insects of the orchard and garden. Includes field, laboratory, and bibliographic work, and a weekly lecture on the history, principles, and practice of economic entomology. Should be preceded by Course 7.

3 units, spring quarter (Doane) MWF afternoons

11. Taxonomy.—In this course the student is afforded an opportunity

to classify material which he has collected or which is in the museum of the department. It is intended to increase his knowledge of systematic entomological literature and to train him in taxonomic methods.

Autumn, winter, and summer quarters (McCracken) By arrangement

12. Insect Histology and Histologic Technic.—The study of the histology of insect tissues and organs, and the special methods of such study.

3 units, autumn quarter (Kellogg) Forenoon hours

13. Advanced Economic Work.—Studies of one or more groups of insects of economic importance, including systematic ecological investigations and methods of controlling the injurious species. Field, laboratory, and library work, with occasional lectures. Intended for students fitting themselves for practical work in Economic Entomology. Open to advanced students.

Autumn, *winter, and *spring quarters (Doane) By arrangement

14. Advanced Biologic Work.—Advanced study and investigation of the biology of insects. Laboratory and field work.

Autumn, *winter, and *spring quarters (Kellogg) By arrangement

BIONOMICS

15. Organic Evolution.—Lectures on the laws or principles of biology and the factors in organic evolution. Not open to first- and second-year students.

3 units, spring quarter (Kellogg) [Not given in 1917-18.]

16. Heredity.—A discussion of the modern knowledge of heredity with special reference to human inheritance. Not open to first- and second-year students.

3 units, spring quarter (Kellogg) [Not given in 1917-18.]

Work for graduate and special students will be specially arranged.

Major students in Entomology must obtain before graduation forty-five units of credit in Entomology, and credit for Course 1 in Zoology, and Course 1 in Botany.

The Entomological Collections contain authoritatively determined specimens, accessible for comparison, in all of the insect orders, and include many sets of specimens illustrating the development and habits of insects. There is included, also, the most important existing collection of North American Mallophaga, comprising the types of four-fifths of all the species so far described from North America and the Pacific Islands, an unusually large collection of Coccidae (scale insects), and valuable series of specimens from the Galápagos Islands, Samoa, and the Philippine Islands.

Laboratory Fees.—$2.50 per quarter for each laboratory course.

GEOLOGY AND MINING

Geology and Paleontology

Bailey Willis (Geology), James Perrin Smith (Paleontology), Professors.

Austin Flint Rogers (Mineralogy), Cyrus Fisher Tolman, Jr., (Economic Geology), Associate Professors.

Mining and Metallurgy

David Morrill Folsom (Mining), Professor.

[1]Galen Howell Clevenger (Metallurgy), Research Professor.

[23]Hayes Wilson Young, Waldemar Fenn Dietrich (Metallurgy), †Valentine Richard Garfias (Petroleum Technology), Assistant Professors.

Students intending to pursue their major subject in the Department of Geology and Mining should offer as a part of their entrance preparation solid geometry, trigonometry, advanced algebra, physics, and chemistry; otherwise the mathematics, physics, and chemistry must be taken in the University.

Courses of study in the Department of Geology and Mining lead to the degree of Bachelor of Arts on completing four years of study, or the equivalent of one hundred and eighty units of credit. The degree of Engineer is given in Mining or Metallurgy on completion of an additional year, or the equivalent of forty-five additional units of credit, including a thesis. Or the degree of Master of Arts may be secured at the close of the fifth year's work, including a thesis, in accordance with the regulations of the University (*Register* p. 86). The degree of Doctor of Philosophy is given on completion of the required additional work under the conditions stated in the *Register* (p. 87). The requirement that the work shall be done in residence may in part be waived on recommendation of the department when the needs of original investigation cannot be met at the University.

Courses of Study

The following is a list of the studies offered in the department. They are grouped under the heads of Geology, Mineralogy, Economic Geology, Paleontology, Mining, and Metallurgy. Certain elementary courses in the department are required of all students, as indicated: Geography 1; Geology 1, 2 3; Economic Geology 1, 2; Mineralogy 1;

[1] Absent on leave for the autumn quarter, resigned December, 1917. [23] Absent on leave for the winter and following quarters; † for the year.

Paleontology 2, 3. Other courses are elective, except that no study may be taken without proper preparation, and should be selected only after conference with the instructors. At least sixty units of work in the department will be required for the degree of Bachelor of Arts of all students intending to follow the profession of geology and mining.

GEOLOGY

Geography: Physical Geography.—A lecture course on the aspects of the earth, treating of the facts, causes, and laws of physical geography; intended to give the student a knowledge of the physical world as the abode of man. Required of all majors in Geology and Mining; open to students from any other department.

4 units (for Geology majors), 3 units (for other majors), autumn quarter (Willis) TThS 8

Geology 1: Elementary Geology.—A lecture course on elementary geology, comprising a discussion of the phenomena and processes of geologic changes and an outline of geologic history. Designed to constitute an introduction to all other courses in the department, and required of all majors; open to students from any other department.

4 units, winter quarter (Willis) MWF 8; Lab. by arrangement

2. Field Excursions. Elementary practice in geological observation as illustrated by the local facts of the geology within reach from the University. Required of Geology and Mining majors and open only to them, except by special arrangement.

2 units, autumn and spring quarters (Willis, Tolman) S forenoons

3. Structural Geology.—Advanced work in the structure of stratified, massive, and foliated rocks. Open only to students who have had Physical Geography, Geology 1 and 2, and Mineralogy 1.

2 units, winter quarter (Willis) TTh 9

4. Field Geology.—Field practice in working out geology in the field and its representation upon topographic maps and sections. Prerequisites: Geology 1, 2, 3, Mineralogy 1, and Civil Engineering 4*a*. Students not majoring in the department may omit Geology 3 and 4.

5 units, summer quarter (Willis)

5. Topographic Geology.—Field and laboratory work, with the construction of geologic maps and sections. Open to students who have completed course 4 in Geology.

5 units, summer quarter (Tolman)

6. Regional Geology.—Lectures and reading, with discussions in seminar, on the geologic provinces of North America and other continents. (Willis) By arrangement

7. Advanced Geology.—Reading and research work for advanced students in Geology.

(Willis) By arrangement

MINERALOGY

Mineralogy 1: Common Minerals and Rocks.—The study of the more common minerals and prominent rock types. An elementary course with emphasis upon sight determination and simple physical and chemical properties. Introductory to the other courses in mineralogy and petrography. Open to students who have had Chemistry 1, *a*, *b*, and 3. Required of all Geology and Mining students, and open to a limited number of other students in order of application.

4 units, autumn and spring quarters (Rogers)
Lec. MW 10; Lab. MW 1:05-4:05

2. Crystallography.—An elementary study of the geometrical and optical properties of crystals and of the polarizing microscope as an instrument of research. This course is intended primarily as a prerequisite for course 3, but may also be taken independently by chemistry and physics students as an introduction to the study of the solid state.

4 units, winter quarter (Rogers) Lec. WF 11; Lab. WF 1:05-4:05

3. Systematic Mineralogy.—Systematic study of the important minerals and their determination by all available methods. Mineralogy 1 and 2 (Crystallography) and Chemistry *d* (Qualitative Analysis) are prerequisites.

4 units, spring quarter (Rogers) Lec. TTh 10; Lab. TTh 1:05-4:05

4. Petrography.—Study of hand specimens and thin sections of the principal rock types and mineral deposits. In course 3 the properties or characters of minerals are considered, while course 4 is primarily concerned with the relations between associated minerals with special reference to their occurrence and origin. Mineralogy 2 and 3 are prerequisites.

5 units, autumn quarter (Rogers)
Lec. WF 11; Lab. WF and one period by arrangement, 1:05-4:05

5. Advanced Mineralogy.—Advanced work in crystallography, mineralogy, or petrography may be undertaken by properly prepared students.

2 to 5 units, winter quarter (Rogers) By appointment

ECONOMIC GEOLOGY

1. Non-metals.—The occurrence, distribution, origin, and geologic methods of investigation of the non-metallic substances. Prerequisite: Mineralogy 1.

4 units, winter quarter (Tolman) MTThF 8

2. Ores.—The ore-forming processes, modes of occurrence of the various types of ore bodies, and the structures of the ores. The geologic study of the metallization of the important mineral-bearing provinces of the world and especially of the United States, and the description of the important ore deposits typical of each province. Open to students who have completed Mineralogy 1.

4 units, spring quarter (TOLMAN) MTThF 8

3. Seminar in Ore Deposits.—A review of the literature of ore deposits and the bearing of the data collected upon the problems of ore formation. Prerequisite: Mineralogy 4. For seniors and graduate students. (Three lecture and conference periods and one to three laboratory periods.)

4 to 6 units, spring quarter (TOLMAN) By arrangement

4. Special Courses.—These include: (*a*) a study of the literature of same special phase of economic geology, with a thesis; (*b*) field investigations of some mine or mineral district, or the general economic geology of an assigned area; (*c*) microscopic studies of ores collected during field studies, or microscopic investigation of suites of specimens owned by the University. (For graduate students; in exceptional cases seniors will be admitted.)

Winter and spring quarters (TOLMAN) By arrangement

PALEONTOLOGY

Paleontology 1: Systemtic Paleontology.—History and character of fossils. Three lectures and six hours of laboratory work weekly.

4 units, autumn quarter (SMITH) MWF 10

2. Historical Geology.—History and character of geologic formations. Three lectures and six hours' laboratory work weekly.

4 units, winter quarter (SMITH) MWF 10

3. Historical Geology.—Continuation of course 2.

4 units, spring quarter (SMITH) MWF 10

4. Systematic Conchology.—Special studies in Teritary and Recent Conchology of the West Coast. One lecture and two afternoons of laboratory work weekly.

2 units, autumn quarter (SMITH) TTh 1:05-4:05

5. Tertiary Conchology of California.

2 units, winter quarter (SMITH) ThF 1:05-4:05

6. Paleobotany of California.

2 units, spring quarter (SMITH) ThF 1:05-4:05

7. General Geology of California.
2 units, autumn quarter (Smith) TTh 10

8. Detailed Stratigraphy of California.
2 units, winter quarter (Smith) TTh 10

9. Stratigraphic History of the Great Basin.
2 units, spring quarter (Smith) TTh 10

10. Advanced Paleontology.—Original investigation of various problems in paleontology, especially of invertebrate morphology, and of the distribution of faunas. This course will consist entirely of private work in field and laboratory. Open to advanced students and graduates.
2 to 5 units, all quarters (Smith) By arrangement

MINING

1. Mining Methods.—Prospecting, development, and mining methods. Prerequisites: Economic Geology 2 and 3.
3 to 4 units, autumn quarter (Folsom) MWF 8

2. Mining Excavation.—Lectures and assigned reading on explosives and drills, and on methods of earth, rock, and ore excavation, including shaft sinking and tunneling. Prerequisites: Geology 1, Mineralogy 1.
3 units, winter quarter (Folsom) MWF 8

3. Mining Machinery.—Lectures and assigned reading on the development and adaptation of power for mining purposes. Air compressors, pumps, hoists, and ventilating machinery. Mechanical handling of ore. Prerequisite for Mining students: Applied Mathematics 3.
3 to 4 units, winter quarter (Folsom) MWF 9

4. Ore Dressing.—Crushing and concentrating machinery and methods.
3 units, spring quarter (———)

5. Petroleum Technology.—The course comprises a general survey of the various problems involved in the exploitation of oil deposits.
3 or 4 units, autumn and spring quarters (Folsom) MWF 9

6. Petroleum Mining.—The course consists of detailed work on typical problems related to the various branches of petroleum engineering. Prerequisite: Mining 5. Students from other departments may register by permission of the instructor.
3 to 4 units, winter quarter (Garfias) [Not given in 1917-18.]

7. Petroleum Engineering.—This course is intended for students who expect to specialize in some branch of petroleum technology. Prerequisites: Mining 5 and 6, or equivalent experience.
2 to 6 units, any quarter (Garfias) [Not given in 1917-18.]

7a. Experimental Investigation of Petroleum Engineering Problems.—This course is given in coöperation with the Department of Mechanical Engineering and consists of laboratory work upon the physical properties of petroleum and its products, or other experimental investigations. Prerequisites: Mining 5 and 6. Students will register in M. E. 29.

2 to 5 units, any quarter (Eckart) By arrangement

8. Mine Surveying and Geologic Mapping (surface and underground).—Taken in connection with Geology 5 (Topographic Geology).

5 units, summer quarter (Tolman, Folsom)

9. Mining Practice.—Systematic study of general mining, milling, or smelting operations in the field in a representative mining district. This work will be under the direction of the department. Open only to graduates or advanced students.

15 units, summer quarter (Folsom, Dietrich, Young)
[Not given in 1917-18.]

10. Mine Engineering.—Lectures and assigned reading on general engineering and economic problems in connection with mining operations. Open only to graduates or advanced students.

(*a*) Principles governing the valuation of mineral deposits.

(*b*) Engineering problems, the design of a mine plant.

3 units, autumn and *winter quarters (Folsom) By arrangement

METALLURGY

Lecture Courses

Metallurgy 1: Metallurgy of Constructive Materials.—Lectures upon the manufacture and properties of iron and steel and, to a less extent, the other alloys used in engineering. Open to students who have completed Chemistry 1.

3 units, autumn quarter (Dietrich) MWF 8

2. Hydro-Metallurgy of Gold and Silver.—Lectures upon the general principles of hydro-metallurgical practice, with particular reference to the cyanide process. The older and now obsolete processes of chlorination, hyposulphate lixiviation, patio and pan amalgamation, etc., are referred to very briefly. Open to students who have completed Chemistry 1 and *a*. Prerequisite of Metallurgy *c*.

3 units, autumn quarter (Young) MWF 9

3. General Metallurgy.—Lectures upon the general principles of metallurgy, the fundamental chemical reactions, fuels, refractory materials,

pyrometry, and alloys. The minor metals are dealt with briefly in this course. Open to students who have completed Chemistry 1 and *a*.

4 units, winter and summer quarters (DIETRICH) TWThF 10

4. Metallurgy of Lead.—Lectures upon lead smelting, refining of base bullion, the pyrometallurgy of gold and silver insofar as it is inseparable from that of lead, parting and electrolytic refining of Doré bullion. Open to students who have completed Chemistry 1 and *a*, and Metallurgy 3.

3 units, spring quarter (DIETRICH) MWF 10

5. Metallurgy of Copper.—Lectures upon the smelting of copper ores, converting, electrolytic refining, and a brief discussion of the hydrometallurgy of copper. Open to students who have completed Chemistry 1 and *a*, and Metallurgy 3.

3 units, spring quarter (DIETRICH) MWF 9

LABORATORY COURSES

a. Assaying.—The determination of gold, silver and lead in ores and metallurgical products by fire assay. Open to students who have completed Chemistry 1 and *a*. Limited to sixteen students per quarter.

3 to 5 units, autumn and spring quarters (DIETRICH, YOUNG) MTWThF 1:05-4:05

b. General Metallurgy.—Laboratory work on the standardization and uses of various types of pyrometers, and the metallographic study of a limited number of metals and alloys.

3 units, winter quarter (———) [Not given in 1917-18.]

c. Metallurgy of Gold and Silver.—This course involves the investigation and the making of a report upon the possible treatment of a gold or silver ore by the cyanide process. Open to students who have completed Chemistry *d* and Metallurgy 2 and *a*.

4 to 6 units, winter quarter (DIETRICH) MTWThF 1:05-4:05

d. Flotation.—This course involves the investigation and the making of a report upon the possible treatment of an ore by flotation. Open to students who have completed Chemistry *d*, Metallurgy *a*, and Mining 2.

4 to 6 units, spring quarter (DIETRICH) MTWThF 1:05-4:05

e. Metallurgical Research.—Properly qualified students may take up any subject of metallurgical investigation in the laboratory and, under proper restrictions, certain investigations may be carried on in the field. Also work in bibliography.

3 to 10 units, all quarters (CLEVENGER) By arrangement

GERMANIC LANGUAGES

WILLIAM ALPHA COOPER, *GEORGE HEMPL, KARL GUSTAV RENDTORFF, Professors.
BRUNO BOEZINGER, CHARLOTTE A. KNOCH, Assistant Professors.
CHARLES REINING, Instructor.

In the following list of courses those of group I are designed: (1) to furnish students whose major subject is German with the necessary preparation for the courses of group II, (2) to prepare students of other departments of the University to read the technical literature in German on their special subjects, and (3) to cultivate a taste for German literature and provide a sufficient equipment for further reading in that field, in later life.

Both first-year and second-year German run through three quarters. The work of third-year German combines a reading course of three units with a composition course of two units, running through three quarters. Students who have completed this normal amount of third-year German may take any course in group II for which, in the judgment of the instructor in charge, they are prepared. All courses in group II (except 106, 131, 132, 133, and 137) presuppose considerable facility in reading German and the ability to understand lectures and answer questions in German.

The Department accepts candidates for the degrees of A. B., A. M., and Ph. D., in German, and for certification as high-school teachers of German in the State of California. Special consideration is given to the needs of those who intend to make the teaching of German their profession, emphasis being put upon pedagogical training as well as upon scholarly attainment.

Candidates for the A. B. degree in German, who do not intend to teach German, are expected to take third-year German and six courses (or fifteen units) selected from group II. They are advised to take, in addition, some laboratory courses in science, some courses in English, history, and allied subjects, and in a foreign language other than German. This leaves to the free election of the student about one-half of the number of units required for graduation, the proportion being even larger for those who present units of credit in German for entrance into the University.

Candidates for the A. B. degree, in German, who intend to teach German, are expected to take thirty units, selected, with the approval

* Some of the courses offered by Professor Hempl are to be found in the announcement of the Department of Latin.

of the Department, from group II (Advanced and Graduate Courses). They will be expected also to take one course in German during each quarter of their graduate year. The elections should include courses in conversation and composition, grammar, individual authors, history of literature and civilization, and Middle High German. Proficiency in German will be insisted upon.

Candidates for the Teacher's Recommendation, in German as a second major or a minor subject, are referred, for information concerning requirements, to the Bulletin of the School of Education, 1918-1919. Proficiency in German will be insisted upon.

Candidates for the A. M. degree, in German, are expected to take courses 63 and 151, one of the proseminary courses, and thirty units besides from group II.

Candidates for the Ph. D. degree are referred to the bulletin on Graduate Study, 1918-1919.

The library facilities are good, and the collections are being rapidly strengthened in all directions. The private library of the late Professor Hildebrand, of the University of Leipzig, furnishes valuable material, particularly in the older literature and in lexicography. In modern literature the Library offers good opportunities for advanced work, the Goethe collection being especially satisfactory. The files and the current numbers of most of the important journals are at hand.

I. Elementary and Intermediate Courses

1. First-year German.—It is the object of this course to put the learner in possession of the elements of the German language. This implies: (1) a personal command of simple German, that is, the ability to understand such German, whether heard or read, and to employ the language in simple conversation, narration, and description, both orally and in writing; (2) such a ready familiarity with the elements of German grammar as is essential for the attainment of this command of the language.

5 units, autumn quarter (Knoch, Reining) MTWThF 8, 9

2. First-year German, continued.

5 units, winter quarter (Knoch, Reining) MTWThF 8, 9

3. First-year German, continued.

5 units, spring quarter (Knoch, Reining) MTWThF 8, 9

[Note.—Courses 1, 2, and 3, together, are equivalent to two years of German in the high school, and may be taken by students who have presented no units of credit in German for entrance into the University. Those who have had one year of German in the high school and present one unit for entrance may take courses 2 and 3. Those who present two units in German for entrance may take courses 1, 2, and 3 as a review, if they desire, but will receive no credit for the work.

In 1918-19 two sections of first-year German will be given as a part of the regular work of the Department Faculty, with no charge beyond a syllabus fee of fifty cents per quarter. After October 1, 1919, first-year German will be given by competent instructors under the supervision of the Department Faculty, and a fee of $7.50 per quarter will be charged. Unversity credit will still be granted for the work as at present.]

21. Second-year German.—The aim of this course is to extend and strengthen the student's personal command of German, both oral and written. Three periods a week are devoted to the reading and discussion in German of texts selected from the writings of contemporary or late nineteenth century authors. In the other two periods of the week the text that is read furnishes the material for exercises in composition, practical grammar, and the study of words.

5 units, autumn quarter (BOEZINGER, KNOCH, REINING) MTWThF 8, 9, 10

22. Second-year German, continued.

5 units, winter quarter (BOEZINGER, KNOCH, REINING) MTWThF 8, 9, 10

23. Second-year German, continued.

5 units, spring quarter (BOEZINGER, KNOCH, REINING) MTWThF 8, 9, 10

24. Second-year German.

5 units, summer quarter (KNOCH) MTWThF 9

[NOTE.—Courses 21, 22, and 23, together, are the equivalent of the third and fourth years of German in the high school. Prerequisites: Courses 1, 2, and 3, or two entrance units in German. Students who present three units in German for entrance should take courses 22 and 23, or 23 and 24. Course 24, which is given only in the summer quarter, is designed for students presenting from two to three entrance units in German.]

25. Scientific German.

3 units, autumn quarter (BOEZINGER) MWF 8

26. Scientific German, continued.

3 units, winter quarter (BOEZINGER) MWF 8

27. Scientific German, continued.

3 units, spring quarter (BOEZINGER) MWF 8

28. Scientific German.

2 to 3 units, summer quarter (KNOCH) TTh 10

[NOTE.—Courses 25, 26, and 27 form one continuous course, but credit may be obtained for the work of any quarter separately. Prerequisites for 25; Courses 1, 2, and 3, or two entrance units in German. Scientific German should not be taken before the sophomore year.]

31. Third-year Reading, Drama.—The dramas read are selected from the classical period. An occasional recitation hour is devoted to lyrics and ballads from the same period.

3 units, autumn quarter (KNOCH) MWF 10

32. Third-year Reading, Drama, continued.—The dramas read are

chosen from the period between 1805 and 1888. Selected lyrics and ballads from the same period are read at intervals.
3 units, winter quarter (KNOCH) MWF 10

33. Third-year Reading, Drama, continued.—The dramas read are taken from the period since 1888. Lyrics from the same period are read from time to time.
3 units, spring quarter (KNOCH) MWF 10

34. Third-year Reading, Novel.—The novels studied are from the period since 1800. Lyrics and ballads are read now and then throughout this and the following two courses.
3 units, autumn quarter (BOEZINGER) MWF 11

35. Third-year Reading, Novel, continued.
3 units, winter quarter (BOEZINGER) MWF 11

36. Third-year Reading, Novel, continued.
3 units, spring quarter (BOEZINGER) MWF 11

37. Third-year Reading.
3 units, summer quarter (KNOCH) MWF 9

[NOTE.—Any three of the courses 31 to 37 will fulfill the minimum requirement in reading for admission to the courses numbered from 61 on. The works read in class, together with those read outside, give an introduction to the modern German drama, or novel, as the case may be, and prepare inquiring students for further independent reading in these fields. The method employed in conducting these courses is designed to help the students reach the point where they can read modern literary German without drudgery.]

38. Third-year Composition.—By composition is meant, not translation from English, but the employment in connected prose of German material either gathered from reading or specially assigned by the instructor.
2 units, autumn quarter (REINING) TTh 10

39. Third-year Composition, continued.
2 units, winter quarter (REINING) TTh 10

40. Third-year Composition, continued.
2 units, spring quarter (REINING) TTh 10

II. ADVANCED AND GRADUATE COURSES

51. Advanced Composition.—The aim of this course is to develop correct, idiomatic, and adequate expression.
2 units, autumn quarter (BOEZINGER) TTh 8

52. Advanced Composition, continued.
2 units, winter quarter (BOEZINGER) TTh 8

53. Advanced Composition, continued.
2 units, spring quarter (BOEZINGER) TTh 8

The following three courses provide individual instruction and guidance to meet special needs and desires:

61. **Directed Reading.**—Prerequisites: Three courses in third-year reading.
1 or 2 units, any quarter (Cooper, Rendtorff) To be arranged

62. **Individual Composition.**—The purpose of this course is to supplement the work of the other composition courses, and to afford an opportunity to continue practice in composition, under criticism, as long as the student remains at the University. In the summer quarter those taking the course will meet regularly as a class.
1 unit, autumn, winter, and spring quarters (Rendtorff) By arrangement
1 or 2 units, summer quarter (Cooper) T 11

63. **Undergraduate Thesis.**—Individual training in the aim and method of research. This course is designed to cultivate the habit of finding things out for one's self, instead of merely seeking authorities to quote.
1 or 2 units, any quarter (Cooper, Rendtorff) By arrangement

The following nine courses take up individual authors and study their lives, works, and times:

71. **Lessing and his Time.**
3 units, spring quarter (Rendtorff) TTh 8

72. **Herder and the Storm and Stress.**
3 units [Not given in 1917-18.]

73. **Goethe, his Life and Works up to 1775.**
3 units, autumn quarter (Cooper) [Not given in 1917-18.]

74. **Goethe, his Life and Works after 1775.**
3 units, winter quarter (Cooper) [Not given in 1917-18.]

[Note.—Courses 73 and 74 are given alternate years with 76 and 77.]

75. **Goethe's Lyrics and Ballads.**
3 units, summer quarter (Cooper) [Not given in 1917-18.]

76. **Goethe's Faust: Urfaust, Fragment of 1790, and Part First.**
4 units, autumn quarter (Cooper) TWThF 10

77. **Goethe's Faust: Part Second.**
4 units, winter quarter (Cooper) TWThF 10

78. **Schiller's Lyrics and Ballads.**
3 units, autumn quarter (Rendtorff) TTh 8

79. **Schiller's Dramas.**
3 units, winter quarter (Rendtorff) TTh 8

The following nine courses deal with the literary history of Germany:

81. **History of German Literature up to the Nineteenth Century.**
4 units (Rendtorff) [Not given in 1917-18.]

82. **History of the Nineteenth Century Literature.**
3 units, autumn quarter (Rendtorff) MWF 8

83. The Romantic School.
3 units [Not given in 1917-18.]

84. The Period of Realism.
3 units [Not given in 1917-18.]

85. Current Literary Movements.
3 units, winter quarter (RENDTORFF) MWF 8

86. The Development of the Drama.
3 units [Not given in 1917-18.]

87. The Development of the Novel.
3 units [Not given in 1917-18.]

88. The Development of Lyrical Poetry.
3 units [Not given in 1917-18.]

89. Introduction to Literary Criticism.
3 units [Not given in 1917-18.]

The following nine courses are intended especially for prospective teachers of German:

101. Conversation.—Discussions of country and people.
2 units, spring quarter (KNOCH) Th 2:05-4:05

102. Conservation.—Discussions of writers and texts suitable for high school courses.
2 units, summer quarter (KNOCH) Th 2:05-4:05

103. German Orthography and Phonology.
2 units, autumn quarter (HEMPL) TTh 1:05

104. German Morphology.
2 units, winter quarter (HEMPL) TTh 1:05

[NOTE.—Courses 103 and 104 present systematically the more important facts of German grammar, together with individual investigations of the usage of various writers. Course 105 is mainly an inductive study of syntax, with occasional lectures on historical developments, and is conducted in German.]

105. German Syntax.
3 units, summer quarter (COOPER) MWF 10

106. Modern Language Teaching.—Lectures on the various methods of teaching modern foreign languages, and the psychology involved.
1 unit, autumn quarter (HEMPL) W 1:05

107. German Teachers' Course.—For candidates for the high school teachers' recommendation. Instruction and practice in progressive methods of teaching; examination of available books and illustrative material. Course 106 should be taken at the same time as this course.
4 units, autumn quarter (COOPER) MTh 2:05-3:45

[NOTE.—Students taking course 107 have access to the Department's special collection of high-school German textbooks, published in America, and a model reference library for a high-school teacher of German, as well as an extensive collection of maps and pictures designed for use in teaching.]

108. German Teachers' Course.—For teachers of some experience. Discussions of the literature on modern language teaching, and study of maps and pictures especially designed for use in modern language classes.

2 units, summer quarter (COOPER) T 2:05-4:05

109. Practice Teaching.—A limited number of Major students who have made satisfactory records in courses 106 and 107 may arrange for practice in teaching in connection with the classes in first-year and second-year German. After permission has been obtained the course should be registered for in the Education Department under the appropriate number and title.

3 units, any two quarters (COOPER, KNOCH) To be arranged

121. Gothic [See note below 123].

2 units, autumn and winter quarters (BOEZINGER) W 3

122. Old Norse [See note below 123].

2 units

123. Old High German.

2 units

[NOTE.—Courses 121, 122, and 123 will be given whenever there is sufficient demand for them, provided requests have been sent to the Department long enough in advance to make the necessary arrangements.]

124. Middle High German.—Grammar and selected texts.

2 units, autumn quarter (RENDTORFF) MW 9

125. The National Epic.—A continuation of course 124.

2 units, winter quarter (RENDTORFF) MW 9

126. The Court Epic.—A continuation of course 125.

2 units (RENDTORFF) [Not given in 1917-18.]

127. Minnesong.—A continuation of courses 124 and 125.

2 units, spring quarter (RENDTORFF) MW 8

131. Phonetics.—Lectures and drill in general phonetics, for students of ancient or modern languages, including English.

2 units, spring quarter (HEMPL) TTh 1:05

132. The Genesis of Grammar.

2 units (HEMPL) [Not given in 1917-18.]

133. The Genesis of Writing.

2 units (HEMPL) [Not given in 1917-18.]

134. The Runes.—Lectures on the origin and development of primitive Germanic writing.

2 units (HEMPL) [Not given in 1917-18.]

135. Introduction to Germanic Philology.
2 units (Hempl) [Not given in 1917-18.]

136. The History of the German Language.
3 units [Not given in 1917-18.]

137. The History of German Civilization.—Lectures with stereopticon, on the development of German civilization in its relation to German literature.
2 units (Rendtorff) [Not given in 1917-18.]

138. Art and Literature.—Lectures, with stereopticon, on German art in its relation to German literature.
2 units, spring quarter (Rendtorff) MW 2:05-4:05

141. Proseminary.—Classical Literature.
3 units [Not given in 1917-18.]

142. Proseminary.—Nineteenth Century literature.
3 units [Not given in 1917-18.]

143. Proseminary.—Philology.
3 units [Not given in 1917-18.]

144. Seminary.
3 units [Not given in 1917-18.]

151. Master's Thesis.—The candidate reports weekly to the instructor in charge for criticism, the work extending over three quarters, as a rule.
1 to 3 units, any quarter (Cooper, Rendtorff) To be arranged

GREEK

Augustus Taber Murray, Professor.
Ernest Whitney Martin, Associate Professor.
John P. W. Storck, Assistant.

[With the coöperation of Dr. Henry Rushton Fairclough, of the Department of Latin.]

The Department accepts as major students those who wish to make their work in college conform to the traditional Arts course, in which Classical studies form an important element, and also makes provision for the thorough training of those who look forward to post-graduate work in the Classics either in this University or elsewhere.

Students who have had no Greek before entering the University may begin their study of the language in any quarter in introductory

classes which are open to students in all departments of the University. Students who offer Greek on entrance will be registered in classes adapted to their needs.

The major requirements for graduation amount normally to forty-five credit units. These for the most part naturally represent work in the study of the Greek language, especially in the case of students looking forward to post-graduate work in the Classics, but after the completion of courses 1-6 students desiring to do so may substitute for further work in the language the more general courses offered in the Department, and with the consent of the departmental adviser a part of this elective work, when the tastes or special aims of the individual student justify it, may be taken in allied departments.

Together with the classes in the Greek language the Department offers courses in Greek Literature, Greek Art, Greek History, and New Testament Literature, which, as above indicated, may be taken as a part of the required work of major students in Greek, but which presuppose no knowledge of the Greek language, and are open to students in all departments of the University.

Students applying for the High School teacher's recommendation in Greek must have completed the following courses: for a major, 1-6 inclusive, nine units selected from courses 7-12, and 17 and 18; for a minor, 1-4, 6 (or an equivalent), 17, and 18.

In courses 1-3 the work is arranged so as to provide as far as possible individual instruction adapted to the needs of each student. In courses 4-6 the intensive study of a limited portion of the authors read is supplemented by sight translation and by readings and lectures by the instructor.

Undergraduate Courses

1. Introduction to Greek.—Grammar (Bryant and Lake); learning of word-lists; writing of simple sentences; reading of portions of the Gospel of John (White).

5 units, any quarter (Murray) MTWThF 1:05

2. Xenophon.—Review of Greek Grammar; learning of word-lists from Xenophon; reading of selections from the Anabasis (Murray); writing of exercises based upon the text read.

4 units, autumn, winter, and spring quarters (Murray) MTThF 1:05

3. Attic Prose Writers.—Systematic review of Greek syntax (Goodwin); learning of word-lists from the texts read; reading of portions of Cebes' Tablet (Parsons); Plato's Apology (Dyer-Seymour).

4 units, autumn, winter, and spring quarters (autumn, Storck; winter and spring, Murray) MTWF 8

4. Introduction to Homer.—Study of Homeric forms and meter (Seymour); learning of Homeric word-lists (Owen and Goodspeed); reading of selections from the Iliad (Monro).
4 units, autumn quarter (Fairclough) MWThF 9

5. The Greek Historians.—Selections from Herodotus (Smith); Thucydides, Book I (Morris); study of The Greek Historians (Bury).
4 units, winter quarter [Not given in 1917-18.]

6. Introduction to Greek Poetry.—Reading of Euripides' Alcestis (Earle); the Greek Lyric Poets (Tyler); the Greek Anthology (Stadtmüller); Short History of Greek Literature (Wright).
4 units, autumn quarter [Not given in 1917-18.]

7. Euripides.—Reading of Medea (Moore); Hippolytus (Harry); lectures and a study of these dramatic themes as treated by later poets.
3 units, autumn quarter (Murray) [Not given in 1917-18.]

8. Sophocles.—Reading of Antigone (Dodge); Electra (Mather); lectures on the art of Sophocles.
3 units, winter quarter (Murray) [Not given in 1917-18.]

9. Aeschylus.—Reading of Prometheus Bound (Allen-Wecklein); Agamemnon (Sidgwick); lectures.
3 units, spring quarter (Murray) [Not given in 1917-18.]

10. Plato.—Reading of the Republic, Books I and II (Wells); lectures.
3 units, autumn quarter (Murray) MWF 11

11. Demosthenes.—Reading of the De Corona (Tyler); sight translation of Aeschines Against Stesiphon (Richardson).
3 units, winter quarter (Murray) MWF 11

12. Pindar and Theocritus.—Reading of selected Odes of Pindar (Gildersleeve); reading of Theocritus (Cholmeley); lectures on Pastoral poetry in ancient and modern literatures.
3 units, spring quarter (Murray) MWF 11

Supplementary Courses

13. Individual Work.—Students and instructors meet each week for work suited to the needs of the individual.
1 to 4 units, each quarter (Murray) By arrangement

14. Journal Club.—Instructors and advanced students meet each week for the discussion of journals and new books of interest to Classical students.
2 units, each quarter (Martin) [Not given in 1917-18.]

15. Thesis Course.—Advanced students may under the guidance of the instructor undertake special studies for presentation in thesis form. This course is intended primarily to afford training in the methods of investigation.
2 units, each quarter (MURRAY) By arrangement

16. Modern Greek.—Grammar (Rangabe); reading of easy texts.
2 units, winter and spring quarters (MARTIN) F 2-4

17. Teachers' Course.—Lectures on methods, with practical training.
2 units, spring quarter (MURRAY) S 9

General Courses

18. The Greek Epic.—Lectures on Homeric Poetry, with reading of the Iliad and Odyssey in English (Iliad, Lang, Leaf, and Meyers; Odyssey, Butcher and Lang).
3 units, autumn quarter (MURRAY) MWF 10

19. Greek Tragedy.—Lectures on the art of tragedy among the Greeks with the study of selected plays in translation (Aeschylus, Morshead; Sophocles, Jebb; Euripides, Everyman's Library).
3 units, winter quarter (MURRAY) MWF 10

20. New Testament Literature.—Lectures on the origin, authorship, and characteristics of the books of the New Testament. Peak's Critical Introduction is used as a handbook.
3 units, spring quarter (MURRAY) MWF 10

21. Greek Literature, Prose Writers.—Lectures; reading in translations of selections from Herodotus, Thucydides, Xenophon, Plato, Demosthenes, Plutarch, and Lucian. Text book, Short History of Greek Literature (Wright).
3 units, autumn quarter (MARTIN) [Not given in 1917-18.]

22. Greek Literature, Poets.—Lectures; reading in translations of selections from the greater Greek Poets with some reference to their influence on later literature. Text-book, Homer to Theocritus (Capps).
3 units, winter quarter (MARTIN) [Not given in 1917-18.]

23. Greek Myths.—The more important myths and legendary characters of early Greece are traced through Greek Literature with some reference to their treatment in later literature. Lectures with assigned reading. Open only to students who have had Greek.
3 units, spring quarter (MARTIN) [Not given in 1917-18.]

24. Greek History A.—From earliest times down to the end of the Peloponnesian War. Open to all students.
3 units, autumn quarter (MARTIN) [Not given in 1917-18.]

25. Greek History B.—From the Spartan Supremacy to the Roman Conquest. Open to all students.

3 units, winter quarter (Martin) [Not given in 1917-18.]

26. Greek Sculpture.—Lectures, illustrated with photographs and lantern slides, on the history and character of Greek sculpture.

3 units, winter quarter (Fairclough) MWF 8

Graduate Courses

27. The Greek Seminary.—Graduate students and such others as may satisfy the director of their fitness for the work will meet each week during the year 1917-18 for the critical study of Plato's *Republic*.

2 to 4 units, autumn, winter, and spring quarters (Murray) S 10-12

Graduate students will also find it well to take courses 14, 15, and 17.

HISTORY

Ephraim Douglass Adams, [23]Arley Barthlow Show, Edward Krehbiel, Payson Jackson Treat, Professors.

[1]Henry Lewin Cannon, Associate Professor.

Edgar Eugene Robinson, [23]Percy Alvin Martin, Yamato Ichihashi Assistant Professors.

Edward Maslin Hulme, Acting Professor (winter quarter).

Jerome Barker Landfield, Lecturer in Modern European History (autumn quarter).

The Department of History provides a liberal course for the A. B. degree, offers opportunity for graduate study leading to higher degrees in certain selected fields in which the University is especially well equipped, trains teachers of History, and renders a general service to the other Departments of the University.

In addition to its more specialized work, the Department offers a number of courses (grouped as (I) Introductory and (II) Advanced Lecture Courses) intended to meet the general needs of the University constituency. The underlying principle of these courses is that they shall be useful, not in the utilitarian sense, but in the sense that they aid to equip the student for his duties as a citizen and give him instruction that may be helpful in such lines as Law, Journalism, Library research work, State and National Public Service, or in business where a knowledge of domestic and foreign affairs is desirable.

[1] Absent for the autumn quarter; [23] for the winter and spring quarters.

For History majors the curriculum for the degree of A. B. is designed to familiarize the student with the fundamentals and methods of the chief branches of knowledge, and with the methods of historical science. With this object in view, a general system of advice and requirement has been outlined, but it may be varied to suit the circumstances of the truly exceptional student. Under the four-quarter system 180 units are required for graduation. The general system of the History Department prescribes 45 units of History, of which 5 are required in History Training, 3 in an Introductory Seminar, and 6 in a Seminar Course. Additional requirements in other departments are, approximately, in Economics or Political Science 20 units, in English 10 units, a laboratory course in Science, and a reading knowledge of at least one foreign language by the end of the junior year. The course in History of Civilization will not be counted as part of the required units for History majors.

Advanced Degrees.—Graduate students, candidates for advanced degrees, are desired and will be given personal guidance, but the purposeless graduate student will not be accepted by the Department. For the opportunities of graduate study in History see University Bulletin on Graduate Study.

Graduate students seeking to fulfill the requirements of the State Board of Education for the Teachers' Certificate will be given the necessary aid and opportunities, but will register as majors in the School of Education. (See University Bulletin of School of Education.)

The Teacher's Recommendation in History.—Applicants for the Departmental recommendation, as a major, must have completed in a manner acceptable to the Department at least 40 units of History, as follows: (1) Seminar Courses aggregating at least 6 units; (2) the Teachers' Course in History (History 100 and 101), 6 units; (3) 28 units in the group of Introductory Courses selected from the following fields: Mediaeval and Modern History (Courses 10-14 inclusive); English History (Courses 16 and 17); American History (Courses 21-24 inclusive). History majors may substitute for any two of the Introductory Courses 10 units of Ancient History as offered by the Departments of Greek and Latin.

As prerequisite to the Departmental recommendation in History as a minor, the student must have completed at least 30 units in either European or American History, as follows:

1. For the minor in European History: (*a*) 15 units in the group of Introductory Courses selected from the fields of European History and English History; (*b*) 3 units in an Introductory Seminar Course;

(*c*) 6 units in a Seminar Course; (*d*) The Teachers' Course in History, 6 units.

2. For the minor in American History: (*a*) 15 units in the group of Introductory Courses selected from the field of American History; (*b*) 3 units in an Introductory Seminar Course; (*c*) 6 units in a Seminar Course; (*d*) The Teachers' Course in History, 6 units.

Any student who has secured the minor recommendation of the Department in either European or American History may thereafter earn the major recommendation by completing the 15 units of the Introductory Courses in the opposite group.

Students taking History as a major with the intention of preparing for Journalism are referred to the heading Journalism on page 161.

I. Introductory Courses

[**History of Greece.**—See Greek 24 and 25.]

[**History of Rome.**—See Latin 29.]

1. **Historical Training Course.**—A practical course in the finding and handling of historical material. Required of, and limited to, first-year History majors.

5 units, spring quarter (———) [Not given in 1917-18.]

2. **History of Civilization to 1500.**—A survey of the history of civilization, sketching the development of the political, religious, economic, social, and cultural institutions of mankind from the earliest times. Beginning with a discussion of the nature and functions of history, the course surveys the period of antiquity, the civilization of Greece, Rome, and of Christian, Mohammedan, and Oriental peoples down to 1500. Open to all students except first-year History majors. Does not count toward the forty-five units in History required of History majors.

5 units, autumn quarter (Krehbiel, Treat, Ichihashi, Murray, Fairclough, Show, Cannon) MTWThF 8

3. **History of Civilization, 1500-1815.**—A continuation of History 2. After surveying the Era of Religious Wars and the Monarchial Age, the course sketches the colonial, commercial, and cultural expansion of Europe, giving especial attention to colonies in America, and to the impact of Western Civilization on the Far East. This is followed by lectures on the origins and development of democratic institutions, on the Revolutionary and Napoleonic Eras, and on the beginnings of the United States. Open to all students except first-year History majors.

Does not count toward the forty-five units in History required of History majors.

5 units, winter quarter (Hulme, Cannon, Robinson, Treat, Ichihashi, Krehbiel, Adams) MTWThF 8

4. History of Civilization Since 1815.—Continuation of History 3. The industrial revolution and its political and social consequences, the rôle of applied science, the triumph of liberalism, the emergence of class consciousness, national revivals and policies, imperialism, and lectures on important domestic or foreign problems of the several nations in modern times. Open to all students except first-year History majors. Does not count toward the forty-five units in History required of History majors.

5 units, spring quarter (Adams, Krehbiel, Cannon, Treat, Ichihashi) MTWThF 8

10. European History, 395-1300.—A general course on the Middle Ages, dealing with selected phases of the period, and with special emphasis on economic and social progress. Open to all students.

5 units, autumn quarter (Show) MTWThF 10

11. European History, 1300-1648.—A continuation of History 10, with special emphasis on the Renaissance and the Reformation, and covering the broader movements of the later period up to the Peace of Westphalia. Open to all students.

5 units, winter quarter (Hulme) MTWThF 10

12. Europe since 1648.—The period of absolutism and dynastic rivalries, and the origins and development of democracy and nationalism. Open to all students.

5 units, spring quarter (Krehbiel) MTWThF 9

13. European History, 395-1300.—A repetition of History 10 as given above, but divided into two periods from 395 to 1095, and from 1095 to 1300. Either term may be taken independently.

5 units, summer quarter (Show) MTWThF 10

14. Europe since 1648.—A repetition of History 12 as given above, but divided into two terms, the first covering the period from 1648 to 1789, the second from 1789 to date. Either term may be taken independently.

5 units, summer quarter (Krehbiel) MTWThF 9

16. English History to 1485.—A general outline course especially intended for first-year students; lectures and outside reading. Emphasis is placed upon events and institutions which have influenced American History. Open to all students.

4 units, winter quarter (Cannon) MTWF 11

17. English History from 1485 to the present time.—A continuation of History 16.

4 units, spring quarter (CANNON) MTWF 11

21. American History, 1607-1789.—A survey of the English Colonization of the Atlantic Seaboard and of the westward movement of colonists of the British Empire, followed by a consideration of the Revolution and of the formation of the American government. Open to all students.

5 units, autumn quarter (ROBINSON) MTWThF 2:05

22. American History, 1789 to 1848.—Presidential administrations from Washington to Polk: the War of 1812; industrial changes and expansion; abolition; political changes; and territorial expansion. Open to all students.

5 units, winter quarter (ADAMS) MTWThF 2:05

23. American History, 1848-1915.—Slavery issues; the Civil War; reconstruction; industrial changes; new political parties and theories; the United States and world politics. Open to all except freshman students.

5 units, spring quarter (ADAMS) MTWThF 2:05

24. History of the United States, 1877-1917.—A survey of the economic, social, and political developments that followed reconstruction. Particular attention is given to the expansion of population in the Trans-Mississippi West, to the reorganization of political parties, to the growth of national consciousness since 1895, and to the role of the United States in international affairs. First six weeks to 1897. Second six weeks to 1917. Either term may be taken independently.

5 units, summer quarter (ROBINSON) MTWThF 8

27. The Far East.—An account of the relations between Western nations and the peoples of Eastern Asia. Emphasis is placed upon international relations, especially since the middle of the 19th century, rather than upon the domestic history of the Eastern nations. The work of the Portuguese, Dutch, and British is studied and special attention is given to the rise of the British Empire in India. Open to all except freshman students.

5 units, autumn quarter (TREAT) MTWThF 9

28. The Far East.—The relations of the West with China, Indo-China, Japan, and the Philippines. Open to all except freshman students.

5 units, winter quarter (TREAT) MTWThF 9

31. History of Japan to 1600.—A survey of, and an attempt to interpret, the history of ancient and mediaeval civilization of Japan. Partic-

ular attention is paid to the origin of the Japanese race, early influence of the continental civilizations, the Great Reform of 645, the Taiho Code of 701, the position of Buddhism and Buddhists in Nara civilization, Japanese language, Heian or classical culture of Japan, the rise of feudalism, the feudal institutions of Kamakura, the Mongol invasions, Japan's foreign relations, the religions: Shintoism, Buddhism and Christianity, and Hideyoshi's colossal ambitions. Open to all except freshman students.

4 units, autumn quarter (ICHIHASHI) MTWF 11

32. History of Early Modern Japan, 1600-1854.—A detailed examination of feudal Japan under the Tokugawa in order to obtain the underlying factors in Japanese life. Special attention is given to the political and social structure of the country, to Tokugawa laws and legal institutions, Japan's foreign and domestic commerce and commercial institutions, industrial development and industrial arts, fine arts, education, philosophy, science and literature, and Bushido. Open to all except freshman students.

4 units, winter quarter (ICHIHASHI) MTWF 11

36. History of Spanish America.—An outline course dealing chiefly with the Spanish Colonial System and the Spanish-American Wars of Independence. Open to all except freshman students.

5 units, autumn quarter (MARTIN) MTWThF 10

37. History of South America since 1823.—A continuation of History 36. An outline course dealing with the history and institutions of the leading nations of South America; includes the discussion of such topics as the Monroe Doctrine, Pan-Americanism, and the relations between the United States and Latin America.

5 units, winter quarter (MARTIN) [Not given in 1917-18.]

38. History of Latin America.—A general outline course dealing with the colonial expansion of Spain and Portugal in America and with the political, social, and industrial development of the leading republics of Latin America. The first six weeks will deal with the Spanish Colonial System and the Spanish-American Wars of Independence; the last six weeks will include a summary account of historical evolution of the leading republics of Latin America from 1823 to the present time. Considerable emphasis will be placed upon the diplomatic relations between the United States and Latin America. Either section of the course may be taken separately.

4 units, summer quarter (MARTIN) [Not given in 1917-18.]

II. Advanced Lecture Courses

The courses in this group are intended for students of at least junior standing, but sophomores may be admitted at the discretion of the instructor.

[**History of Roman Civilization.**—See Latin 37.]

50. The Italian Renaissance.—General lectures on the learning, art, and culture of the Renaissance in the fourteenth and fifteenth centuries.
3 units, spring quarter (Show) [Not given in 1917-18.]

51. Europe since 1815.—A course of lectures on the conflict of Reaction and Liberalism, the Industrial Revolution, the emergence of class consciousness, nationalism, and imperialism.
3 units, autumn quarter (Krehbiel, Landfield) MWF 9

52. Europe since 1815.—A repetition for the summer quarter of History 51, as above, but so divided as to permit two separate terms of six weeks each.
3 units, summer quarter (Krehbiel) MWF 11

53. World Politics.—This is a course of lectures on the relations of nation to nation and on the desirability, possibility, and means of improving them. Among the topics discussed are: nationalism; national ambitions, missions, and cultures; expansion, imperialism, alliances, and the balance of power; competitive armaments and their economic, social, and political consequences; the function of force in human progress; super-national forces and movements tending to create an international law; The Hague Conferences, and Tribunal; and the various proposals for securing peace, such as disarmament, preparedness, The League to Enforce Peace, The Union of Democratic Control, education, etc.
2 units, spring quarter (Krehbiel) TTh 10

56. English History During the Tudor and Stuart Periods.—Conducted by means of oral reports and informal discussion in class. Open to a limited number of students.
4 units, winter quarter (Cannon) MTWF 9

60. The Westward Movement (1790-1890).—A survey of the expansion of the American people into the Mississippi valley, the American occupation of the Pacific Northwest and of California and the growth and development of the trans-Mississippi region. Particular emphasis is placed upon the history of the Far West in the period since 1850, and its influence upon national and international affairs.
3 units, winter quarter (Robinson) MWF 10

62. History of the West.—A consideration of the political phases of the expansion of the American people; a presentation of the programmes of the Federalist, Republican, Democratic, Whig, Populist, and Progressive parties relating to the West, and of the proposals and influence of such western leaders as Jackson, Benton, Lincoln and others of more recent date; an examination of new issues and new groups that have arisen in the West and their influence upon national party history.

3 units, spring quarter (Robinson) MWF 10

64. British-American Diplomatic Relations.—Lectures and reading on those incidents or conditions in foreign policy where the United States has come into conflict or contact with the foreign policy of Great Britain and her colonies; with a survey of the general purpose of British, and of American foreign policy, throughout the hundred-year period.

3 units, spring quarter (Adams) MWF 11

66. History of Australasia.—An account of British colonization in Australia and New Zealand to the present time. Open to third-year students who have a satisfactory knowledge of English history.

3 units, spring quarter (Treat) MWF 9

68. Modern Japan Since 1854.—A critical study of political and economic Japan since 1854 in order to determine the causes that enabled the nation to attain her present position in the world of politics and economics. Special attention is paid to political movements since the re-opening of Japan to Western intercourse, and to the promulgation of a constitution in 1889, or the struggle between feudalism or bureaucracy and liberalism or democracy.

3 units, spring quarter (Ichihashi) MWF 9

70. History of Mexico and California.—A somewhat detailed study of the History of Mexico up to the present time, and of the history of California to 1848.

3 units, spring quarter (Martin) [Not given in 1917-18.]

72. Latin American Institutions.—This course will deal with the recent history and present-day political institutions of the leading republics of Latin America. Considerable attention will also be paid to contemporary economic and social problems, and commercial relations with the United States. The first six weeks will be devoted chiefly to Argentina and Chile; the last six weeks to Brazil and the remaining Latin American republics. Either section of the course may be taken separately.

3 units, summer quarter (Martin) [Not given in 1917-18.]

[Law 10.] **International Law.**—A course given by the Law Department, strongly advised for History majors interested in world politics and relations. It will be accepted for credit in fulfilling the History requirements for the A. B. degree. Open, at the discretion of the instructor, to majors of other than the Law Department in their third or fourth year.

4 units, spring quarter (LARREMORE) [Not given in 1917-18.]

III. INTRODUCTORY SEMINAR COURSES

The courses in this group are intended primarily for History majors in their junior year, as preparation for senior seminars or graduate work. If a course is not filled by History majors, others may be admitted at the discretion of the instructor.

76. German Constitutional History.—An intensive study from the documents of selected phases of German constitutional development. A reading knowledge of German is desirable. Open to juniors, seniors, and graduates.

3 units, spring quarter (SHOW) [Not given in 1917-18.]

78. Nineteenth Century European Problems.—Papers and class discussions on important domestic and foreign problems of European nations. Open to History majors with two years' credit and to all students who have had History 51 or 52.

3 units, spring quarter (KREHBIEL) MWF 11

80. English Constitutional History.—The course attempts to explain the development and operation of the present English constitution as well as to give the background for American constitutional history. Conducted by means of an intensive study of documents, with outside reading.

5 units, spring quarter (CANNON) [Not given in 1917-18.]

86. Relations Between California and the Federal Government.—An examination of materials revealing the problems of California and their relation to national development. The period 1869-1879 will be studied with emphasis upon problems arising out of the completion of the Pacific railway and the place of California in the national period of Reconstruction.

3 units, spring quarter (ROBINSON) M 2-4

88. American Diplomatic Relations.—Not a general survey of the field, but a specialized study of selected topics, with use of the available documentary material. Intended primarily for History majors, but open to junior students who are familiar with the elements of American and European History.

3 units, autumn quarter (ADAMS) MWF 11

90. Tropical Colonization in the Far East.—A study in the present methods of the English, Dutch, French, and American governments in their tropical dependencies in the Far East. Investigation, discussion, and reports. Open to students who have taken courses 27 and 28.
3 units, autumn quarter (TREAT) MWF 11

92. Governments of the Far East.—A study of the present governmental systems of China and Japan. Open to students who have taken course 28.
3 units, autumn quarter (TREAT) [Not given in 1917-18.]

96. History of Brazil.—A somewhat detailed study of the History of Brazil with special emphasis on the period since 1822. The course will include a comparison of Brazilian political institutions with those of Spanish America and the United States. Open to those who have had History 37 and to others with permission of the instructor.
3 units, spring quarter (MARTIN) [Not given in 1917-18.]

IV. SEMINAR COURSES

[For History majors primarily, of senior or graduate standing.]

[**Seminar in Roman History.**—See Latin 30.]

100. The Principles of History Teaching.—Lectures and class discussions dealing with the problem of teaching History and related subjects in the schools. This course is required for the Teacher's Recommendation but does not count in the required 6 units of Seminar work.
3 units, autumn quarter (SHOW) [Not given in 1917-18.]

101. The Methods of History Teaching.—Class room practice in the teaching of History, Civics, and Economics. This course is required for the Teacher's Recommendation, but does not count in the required 6 units of seminar work for History majors. Open to students who have had History 100 or a satisfactory equivalent.
3 units, winter quarter (SHOW) [Not given in 1917-18.]

102. The Principles and Methods of History Teaching.—The summer quarter course is divided into two terms of about six weeks each, as follows:

First term: The Principles of History Teaching. Lectures and discussions on such problems as the aims of History teaching, the apparatus of History teaching, courses of study, text-books, class-room methods, etc.

Second term: The Methods of History Teaching. Class-room practice in the teaching of History and related subjects, with collateral discussions and criticisms. Students who are qualified may take either

term without the other. This course is required for the Teacher's Recommendation, but does not count in the required six units of seminar work for History majors.

3 units, summer quarter (Show) MWF 2:05

105. Seminar in Mediaeval History.—Subject for 1917-18: The Renaissance.

3 units, winter quarter (Hulme) W 2-4

107. Seminar in Modern European History.—Subject 1917-18: International Joint-Action; a study of the attempts of several nations jointly to control or administer matters of international concern. Open to senior and graduate students.

3 units, autumn and winter quarters (Krehbiel) W 2-4

110. Seminar in English History.—Students are given advice in selecting topics worthy of investigation and are then given individual assistance in preparing a thesis.

3 units, spring quarter (Cannon) By appointment

113. Seminar in the History of the West.—A study of materials relating to the political phases of westward expansion. Subject 1917-18: Political Parties in Congress, 1834-38.

3 units, autumn and winter quarters (Robinson) M 2-4

116. Seminar in American History.—A study of materials relating to the History of the West. Selected topics in the history of elections.

3 units, summer quarter (Robinson) MWF 10

119. Seminar in American Diplomatic History.—Topics for 1917-18 selected from the period 1836 to 1846.

3 units, autumn and winter quarters (Adams) T 3-5

122. Seminar in American-European Relations.—Limited to candidates for advanced degrees.

Units various, any quarter except summer (Adams) By appointment

125. Seminar in the History of the Far East.—Each year some phase or period of the relations of the United States with the Far East will be studied, and each student will prepare a thesis on some special topic of investigation.

3 units, winter and spring quarters (Treat) T 2-4

128. Seminar in Japanese History.—Individual investigation under advice and direction of the instructor.

3 units, autumn and winter quarters (Ichihashi) Th 2-4

131. Seminar in Latin American History.—Subject for 1917-18: Diplomatic Relations between the United States and Latin America.

3 units, autumn quarter (Martin) M 2-4

140. Summer Graduate Work.—Students properly qualified, under the University regulations, to pursue genuine graduate studies, will be given special attention and due credit allotted for the work accomplished. Such students will receive individual advice and guidance, whether in set courses or in special research. For the summer quarter in 1918, the fields in which graduate work may be thus carried, and the instructors in attendance are: (1) Mediaeval History, Professor A. B. Show; (2) Modern European History, Professor Edward Krehbiel; (3) American History, Assistant Professor E. E. Robinson.

Units, not to exceed total of 15 Hours by arrangement

HOPKINS MARINE STATION

Walter Kenrick Fisher, Director.

Session of 1917

The Twenty-sixth Session extended over a period of six weeks, beginning May 21st and closing June 30th.

Courses of Instruction

1. General Zoology.—A course of laboratory work, lectures, and field excursions, designed to illustrate the structure and relationships of the principal groups of animals. Open to all students. (Starks)

2. Marine Invertebrates.—A study of the groups of invertebrate animals found in the sea, with especial reference to relationships and ecology. (Fisher)

3. Embryology.—A course in vertebrate embryology based upon the chick and mammal. (Fisher, Lund)

4. Advanced Work.—Students who are prepared may take up definite problems connected with the anatomy and classification of invertebrates. (Fisher)

The New Hopkins Marine Station

During the summer and autumn of 1917 the new Hopkins Marine Station was built on Mussel Point, Pacific Grove. The Station is a three-story concrete building with large laboratories for classes, and research rooms for investigators. The wooden buildings on Point Aulon, which have been used for the past twenty-five years, will be abandoned.

The Station is named in honor of Mr. Timothy Hopkins, who established the first laboratory at Pacific Grove in 1892.

The situation of the new Station is exceptionally favorable; the property controls a considerable extent of ocean shore and one of the best collecting grounds in the region.

The Station will be open the entire year to investigators and special students. During the summer quarter the regular instruction of the Departments of Zoology and Physiology will be given here, and in addition a number of subjects will be offered by other departments of the University.

For the summer quarter of 1918 (extending from June 18th to August 31st) courses will be offered in General Zoology, Economic Zoology, Marine Invertebrates, Invertebrate Embryology, General Physiology, Physiology Research, and Botany. (See special Bulletin of the Hopkins Marine Station.)

LATIN

Henry Rushton Fairclough, Professor.
Jefferson Elmore, Benjamin Oliver Foster, Associate Professors.
Mary B. Taintor, Assistant in Instruction.

[With the coöperation of Professor Hempl of the Department of Germanic Languages.]

Undergraduate Courses

The aim of the undergraduate courses in Latin is to give the student a somewhat systematic knowledge of the language and its development, an acquaintance with the representative authors of Latin literature, and some insight into the life, culture, and civilization of ancient Rome.

The Department recognizes two classes of major students: (1) those who wish to pursue a course of liberal studies, including Latin as a prominent feature; (2) those who, expecting to teach Latin, desire to be properly equipped for that purpose.

Students who wish to qualify for teaching Latin must take courses 3, 4, 6, 7, 8, 9, 10, 11, and 17, together with such other courses as are recommended by the Department. To other students more freedom of choice is allowed.

Graduate Courses

These courses are open to graduates in Latin, and are most profitable to those who have had some undergraduate work in Greek. The

ability to read French and German is also very desirable, and, in the case of candidates for the degree of Ph. D., necessary. The aim of the course is to give the student a thorough grasp and detailed knowledge of particular authors, and of certain periods and fields of literary activity, as well as a training in literary criticism, and an acquaintance with the methods of original research.

I. Undergraduate Courses

1a. Cicero.—Selected speeches. Open to those who have passed in entrance subject 8*a*.

4 units, autumn and *spring quarters (Taintor) MTWF 11

1b. Virgil.—Aeneid, six books.

4 units, winter and *summer quarters (Taintor, ———)
(winter) MTWF 11; (summer) MTWTh 9

3. Terence and Cicero.—The Andria of Terence and the De Senectute of Cicero. Open to those who have completed course 1, or course 2, or who have offered entrance subject 8*b*.

4 units, autumn and *spring quarters
(autumn, Foster; spring, Fairclough) MTWF 9

4. Catullus and Horace.—Selections from Catullus and the Odes and Epodes of Horace. This course is complementary to course 3, but may be taken independently of it by those who have had course 1 or an equivalent.

4 units, winter quarter (Foster) MTWF 9

5. Legal Latin.—The Institutes of Gaius or Justinian are read both as a training in language and as an introduction to the main principles of Roman law. The course is useful to all who desire a first-hand knowledge of Roman law and of the origins of European social institutions. Open to all students who have had three years of Latin.

3 units, autumn and winter quarters (Fairclough) MWF 10

6. Prose Composition I.—Exercises in the writing of Latin prose.

2 units, autumn, winter, spring, and summer quarters (Elmore) TTh 9

7. Horace.—Satires and Epistles. Open to students who have had courses 3 and 4, or an equivalent. Attention is directed especially to the style and subject-matter, to Horace's influence on Latin literature, and to the salient features of the Augustan Age.

4 units, autumn quarter (Elmore, Fairclough) MTWF 9

8. Livy and Tacitus. Selections from Livy's History and the Agricola and Germania of Tacitus.

4 units, winter quarter (Elmore) MTWF 9

9. Oral Latin.—Practice in speaking Latin and in the direct method of teaching.
2 units, spring quarter (Foster) TTh 9

10. Roman Comedy.—The Rudens and Menaechmi of Plautus and either the Trinummus or Terence's Phormio.
4 units, autumn quarter (Foster) MWThF 11

11. The Letters of Cicero.—Selections from the correspondence are read with a view to studying Cicero's character and the political and social conditions of the period.
4 units, winter quarter (Foster) MTWF 8

13. Prose Composition II.—Open to those who have had course 6, or an equivalent.
2 units, winter quarter (Fairclough) TTh 9

14. Juvenal and Martial.—Selections. Open to Seniors and other properly qualified undergraduates.
4 units, autumn and *summer quarters (Elmore)
(autumn) MTWTh 8; (summer) MTWF 11

17. Teachers' Course.—Lectures on methods of teaching Latin, with practical exercises. Open only to advanced students.
2 units, spring and *summer quarters (Elmore) TTh 11

35. Representative Poets and Prose-writers.—A reading course open to those who have had course 1, or the equivalent.
4 units, summer quarter (Fairclough) MW 10

40. Roman Elegy.—Selections from the poems of Tibullus, Propertius, and Ovid. Open to those who have had the equivalent of courses 3 and 4.
4 units, spring quarter (Foster) MTWTh 8

II. General Courses

29. History of Rome.—A general course, open to all students.
4 units, spring quarter (Elmore) MTWTh 8

31a. Roman Art and Archaeology.—A lecture course complementary to Greek 26.
3 units, spring quarter (Fairclough) MWF 8

31b. Classical Art and Archaeology.—A lecture course open to all students.
2 units, summer quarter (Fairclough) MW 10

32. Latin Literature.—Lectures on the chief poets and prose-writers of Rome, with assigned readings in English translations. Open to all students.
3 units, winter quarter (Foster) MWF 11

37. The History of Roman Civilization.—Open to juniors and seniors and to others by permission of the instructor.

3 units, winter and *summer quarters (ELMORE) MWF 8

III. GRADUATE COURSES

22a. Latin Seminary.—The Seminary is devoted to Epic poetry. The Aeneid of Virgil is studied in its entirety as a work of art and selected passages interpreted. Attention is paid to classical influence on mediaeval and modern literature. The course is of special importance to teachers of Latin. Students should provide themselves in advance with a complete text of Virgil, such as that in the Oxford or Teubner series.

4 units, autumn, winter, and *summer quarters (FAIRCLOUGH) TF 1:05-3:05

22b. Latin Seminary.—Caesar's Gallic War. The whole work is read rapidly, and certain portions assigned for more minute study and discussion. Attention is paid to military antiquities and topography.

4 units, spring quarter (FOSTER) MW 2-4

26. Introduction to Latin Epigraphy.—Lectures and readings in Latin inscriptions.

2 units, spring quarter (FAIRCLOUGH) T 1-3

28. Etruscan.—Lectures on the nature of the language and its relation to other Italic dialects.

2 units, summer quarter (HEMPL) Hours to be arranged

30. Seminary in Roman History.—Open after consultation with the instructor to those who have had course 29, or an equivalent. The subject for the year is a study from the sources of the years from 65 to 57 B. C. The course is intended to be useful to teachers both of Latin and of Roman history.

2 units, autumn quarter (ELMORE) W 2-4

34. Journal Club.

1 unit, autumn and winter quarters (FAIRCLOUGH) T 2

38. Lectures on the History of Latin Sounds and Forms.

3 units, autumn quarter (FOSTER) MWF 8

39. Roman Oratory.—A study of Roman oratory based on Cicero's *de Oratore* and Tacitus' *Dialogus*. Open to graduate students, and to others upon the invitation of the instructor.

2 units, winter quarter (ELMORE) W 2-4

41. Tacitus.—A reading course in the Annals, XI-XVI. Open to graduates and to properly qualified undergraduates.

4 units, spring quarter (ELMORE) TTh 2-4

42. Venetic.—Lectures on the nature of the language and its relation to other Italic dialects.

2 units, winter quarter (Hempl) By arrangement

LAW

†Charles Andrews Huston, Arthur Martin Cathcart, †Joseph Walter Bingham, Clarke Butler Whittier, Chester Garfield Vernier, Professors.

George Purcell Costigan, Jr., Acting Professor (summer quarter).

Marion Rice Kirkwood, Associate Professor.

‡Thomas Armitage Larremore, Instructor.

Henrie Granville Hill, Oscar Kennedy Cushing, Lecturers.

William Campbell Dalzell, Assistant in Instruction.

The Law School

The Law School was established, as a department of the University, in 1893. Its purpose is to provide a thorough legal education for students who are fitted by their maturity and their previous academic training to pursue professional study under university methods of instruction. The curriculum covers three academic years and constitutes an adequate preparation for the practice of law in any English-speaking jurisdiction. Elective courses in Code Pleading and in California Practice are offered. A comprehensive group of courses in Public Law, of value not only to the law student but to the student who contemplates entering the diplomatic, consular, or other government service, is a feature of the curriculum.

Only college graduates and students who have completed two years of work in some department of this University, or its equivalent, are admitted as regular students. Under certain conditions persons over twenty-three years of age who are eligible for admission to the University as regular students may be admitted to the Law School as unclassified students, not candidates for a degree.

The Library

The Law Library contains 21,000 volumes, including complete sets of the English, Irish, Scotch, Australian, and Canadian reports, the reports of all Federal courts, a practically complete set of the reports of the American States, the Australian States, and the Canadian Provinces,

† Absent on leave after autumn quarter.

‡ Absent on leave, 1917-18.

the National Reporter system, the standard collections of cases, the standard English and American legal encyclopedias, the principal American, English, and Canadian digests and citators, sets of the leading American, British, Canadian, and Continental legal periodicals, together with a good collection of text-books. There is also a somewhat complete collection of compiled laws, session laws, and other statutory material, both Federal and State, as well as British, Canadian, and Australian.

The class of 1911, upon graduation, adopted a plan for the purchase, from time to time, of works on Legal History. This collection is known as the "Class of 1911 Memorial Collection on Legal History." The class of 1912 adopted a similar plan for the purchase of a memorial collection of celebrated trials.

Through the generosity of Justice McFarland, and his successor, Justice Melvin, the Library has received, since 1907, a complete set of the records of the California Supreme Court, and through the generosity of Justice Sloss, a complete set of the records of the District Courts of Appeal. Through the kindness of Judge W. W. Morrow the Library has been receiving, since 1916, the records of the Federal Circuit Court of Appeals for the Ninth circuit.

The University Libraries are also available for use by students of the Law School.

Admission to the Law School

Admission to the professional curriculum in law is granted to students duly enrolled in the University, as follows:

I. To students who have received the degree of Bachelor of Arts, or an equivalent degree, from this University or some other institution of recognized collegiate rank.

II. To students who have received credit for substantially two years of work (80 units) offered by this University, including the six units of English Composition; or the substantial equivalent of these 80 units in some other institution of recognized collegiate rank.

III. In the discretion of the Faculty of Law, to students over twenty-three years of age who cannot meet the foregoing requirements, but who are eligible for admission to the University. Such students are termed "unclassified," and are given a certificate in lieu of the degree conferred upon regular students.

Instruction in Practice

A special effort is made to impart to the student a thorough knowledge

of the rules of procedure and practice, and to enable him to acquire a creditable degree of skill and facility in the application of such rules to conditions of actual litigation. To these ends, courses are offered in Common Law and Code Pleading, and in California Practice. In the last-mentioned course particularly, the student is afforded practical experience in the commencement of actions, the preparation of pleadings, the trial of issues of fact, and the argument of questions of law.

Moot Court

A Moot Court, for the argument of questions of law, is conducted by the Faculty. Sessions are held four hours a week throughout the spring quarter, and the work is open to second- and third-year law students.

Order of the Coif

A chapter of the Order of the Coif, a national law school honor society, founded to encourage scholarship and to advance the ethical standard of the legal profession, was established in the Law School in 1912. In the spring quarter of each year, such third-year law students as are deemed worthy of the distinction, selected from the ten per cent of the class ranking highest in scholarship, are elected to membership.

Law School Curriculum

Fundamental courses which are listed below as first-year courses are prescribed. Courses listed as second- and third-year courses may be taken in any order consistent with their special prerequisites, but the courses in Administrative Law, Conflict of Laws, Constitutional Law, Private Corporations, Municipal Corporations, Evidence, and California Practice may not be taken, ordinarily, before the third year.

The courses offered in the Law School are as follows:

Preliminary Course

[Open to students of all departments who have 80 units of credit, and required of students in the Law School.]

1. Introduction to the Study of Law.—Nature, sources, and sanction of law; outline of the historical development of English and American courts and procedure; the content, classification, and determination of rules of law, including a consideration of legal rights and duties, the doctrine of *stare decisis* and the development of some of the more elementary rules of law by combining and comparing decisions; use of law books and the law library. Selected readings and cases.

4 units, autumn quarter (Kirkwood) MTWF 11

First-Year Courses

2. Contracts.—The formation of contracts: offer and acceptance; consideration; contracts under seal. Parties affected by contracts: beneficiaries; assignees; joint and several contractors. The performance of contracts: express and implied conditions; anticipatory breach. Impossible and illegal contracts. Discharge of contracts. Williston, Cases on Contracts, and selected California Cases.

5 units, winter quarter; 4 units, spring quarter (Whittier)
(winter) MTWThF 9; (spring) MTThF 9

3. Torts.—Trespass to person, to real property, and to personal property; excuses for trespass; conversion; legal cause; negligence; contributory and imputed negligence; plaintiff's illegal conduct as a defense; duties of land-owners; hazardous occupations; liability for animals; deceit, defamation, slander, libel, privilege, malice; malicious prosecution, criminal and civil; interference with social and business relations, inducing breaches of duty, fair and unfair competition, strikes, boycotts, business combinations. Bohlen, Cases on Torts.

4 units, winter and spring quarters (Cathcart) MTWF 11

4. Criminal Law.—Nature and sources of criminal law; crime as an act; attempts; criminal intent; circumstances affecting illegality of act; specific offenses; crimes against the person, larceny and allied offenses, crimes against the dwelling-house, conspiracy. Beale, Cases on Criminal Law.

6 units, autumn quarter (Vernier) MTWThFS 10

5. Introduction to Property.—Adverse possession, prescription, accretion; creation of interests in land by agreement or conveyance, methods of transferring interests in land at common law and under statutes, execution of deeds, interpretation of instruments of conveyance, covenants for title, conditions, fraudulent conveyances, recording. Case book to be announced.

4 units, autumn and winter quarters; 7 units, *summer quarter (Kirkwood)
(autumn) TWFS 8; (winter) MTThF 8; (summer) MTWThF 8, TTh 1:05

6. Agency.—Nature of relation; appointment; liabilities of principal for agent's torts, contracts, crimes; liabilities of agent; parties to writings; undisclosed principal doctrines; delegation of agency; termination; ratification. Prerequisite: 4 units of Contracts (Law 2), and 4 units of Torts (Law 3). Wambaugh, Cases on Agency.

6 units, spring quarter (Vernier) MTWThFS 10

Second- and Third-Year Courses

10. Constitutional Law I.—Making and changing constitutions; function of judiciary in enforcing constitutions; separation and delega-

tion of powers; political rights; personal liberty; interstate privileges and immunities of citizens; operation of fourteenth amendment; due process and equal protection of law; procedure; police power; taxation; eminent domain. Hall, Cases on Constitutional Law.

3 units, autumn quarter (CATHCART) WFS 9

11. Constitutional Law II.—General scope of federal powers; foreign relations, Indians, aliens; territories, dependencies, new states; federal taxation; regulation of commerce; intergovernmental relations; protection to persons accused of crime; retroactive laws in civil cases; state laws impairing obligation of contracts; jurisdiction of federal courts. Hall, Cases on Constitutional Law.

3 units, winter quarter (CATHCART) MWF 9

12. Administrative Law and Public Officers.—Administrative regulations; jurisdiction, discretion, adjudication; enforcement of orders; habeas corpus; mandamus; certiorari; equitable jurisdiction in public law. Freund, Cases on Administrative Law.

4 units, summer quarter (HUSTON) [Not given in 1917-18.]

13. Municipal Corporations.—Nature; creation, alteration, and dissolution; internal organization; powers; liabilities on contract and for torts; remedies. Beale, Cases on Municipal Corporations, and selected California cases.

5 units, winter quarter (HUSTON) [Not given in 1917-18.]

14. International Law.—International Law defined and distinguished from Municipal Law. International relations in time of peace: definition, recognition, and classification of states; effect of change of sovereignty; jurisdiction on land and on the high seas; nationality. International relations as modified by war: measures short of actual war; effects of war as between enemies; relations between belligerents and neutrals. Open to all law students and to advanced students in other departments. Scott, Cases on International Law.

4 units, spring quarter (LARREMORE) [Not given in 1917-18.]

15. Conflict of Laws.—The principles and rules of "private international law" determining the extent to which the domestic system of law adopts and applies provisions of foreign systems in cases involving extra-territorial factors; more especially (1) nature and effect of domicile and nationality; (2) jurisdiction of courts in proceedings *in personam,* proceedings *in rem,* and proceedings for *divorce;* (3) respective applicability and effect of domestic laws and foreign laws in relation to marriage and other domestic relations; contractual, quasi-contractual, delictual, and judgment obligations; the creation, transfer,

taxation, devise, and inheritance of all forms of property interests. Beale, Cases on Conflict of Laws, Shorter Selection.

3½ units, 1st term, summer quarter (VERNIER) MTWThF 10, TTh 2:05

16. **Admiralty.**—Admiralty jurisdiction, basis; maritime contracts, torts, and crimes; maritime liens, *ex contractu, ex delicto,* priorities, discharge; bottomry and respondentia obligations; salvage; general average. Ames, Cases on Admiralty.

3 units (KIRKWOOD) [Not given in 1917-18.]

17. **Roman Law.**—A comparative study of some leading conceptions of the Roman Law, and its modern developments in the Civil Law of Continental Europe and America, with the related conceptions of the Anglo-American Common Law. Required reading.

4 units (HUSTON) [Not given in 1917-18.]

20. **Landlord and Tenant.**—Creation of relationship; duration of tenant's interest, remedies of landlord for non-performance of tenant's obligations, remedies of tenants against landlord, covenants running with the land as between landlord and tenant, rights and duties of landlord and tenant with respect to third persons. Case book to be announced.

4 units (KIRKWOOD) [Not given in 1917-18.]

21. **Rights in the Land of Another.**—Natural rights, easements, covenants running with the land, public rights, franchises, rents. Gray, cases on Property, Vol. II (2d ed.), and selected California cases.

4 units (KIRKWOOD) [Not given in 1917-18.]

22. **Wills.**—Acquisition of property on the death of former owner, escheat, descent, occupancy, gifts, *mortis causa,* the making, revocation, and republication of wills, ademption and lapse of legacies. Prerequisite: course 5. Gray, Cases on Property, Vol. IV (2d ed.), and selected cases.

4 units, winter quarter (HILL) WS 8, S 11, T 1:05

23. **Future Interests.**—Vested and executory interests; construction of language creating future interests; powers; rule against perpetuities; provisions for forfeiture and restraints on alienation. Prerequisite: courses 7 and 15. Gray, Cases on Property, Vol. V and part of Vol. VI (2d ed.), and selected cases and statutes.

6 units, autumn quarter (BINGHAM) [Not given in 1917-18.]

24. **Water Rights and Irrigation Law.**—A course in the intensive study of the law of water supply rights, with especial reference to water rights in the Western States. Selected cases and legislative enactments.

4 units, summer quarter (COSTIGAN) MTWF 11

25. **Mining Law.**—A course on mining titles under the Federal mining

acts, with especial reference to mining rights in the Western States and Alaska. Costigan, Cases on Mining Law; and legislative enactments.
4 units, summer quarter (COSTIGAN) MTThF 9

26. Persons and Domestic Relations.—Infants: period of infancy; infants' contracts and conveyances, torts, and crimes. Husband and wife; rights of husband as to wife's property; rights of each as to earnings, services, and society of the other; husband's interest in damages for tort to wife; husband's liability for torts or contracts of wife; husband's duty to support wife and wife's authority to bind husband by her contracts; married women's contracts, conveyances, and devices; estoppel of married women; liability of married women for torts and responsibility for crimes; contracts, conveyances, and suits between husband and wife; husband's right to custody of wife. Marriage: promise to marry and breach; marriage as a contract or relation; annulment; divorce; separation. Kales, Cases on Persons and Domestic Relations, and Vernier, Cases on Marriage and Divorce.
6 units, summer quarter (DALZELL) MTWThFS 8

27. Quasi-Contracts.—Origin and nature of quasi-contracts: Benefits conferred in misreliance on right or duty; general principles; misreliance resulting from mistake of law; misreliance on invalid contract, on contract unenforceable because of Statute of Frauds, on illegal contract, on contract impossible of performance, on contract unenforceable because of breach, on supposed requirement of valid contract, on non-contract obligation, on ownership of property: Benefits conferred through dutiful intervention in another's affairs: Benefits conferred under constraint; constraint of duress, of legal proceedings, of tax or assessment: Action for restitution as alternative remedy for breach of contract and for tort.
4 units, autumn quarter (CATHCART) TWF 11, M 2:05

28. Public Utilities.—The nature, rights, and duties of public service callings; railroads and canals; telephone and telegraph; gas, water, irrigation, and other public utilities. Wyman, Cases on Public Service Companies (2d ed.).
3½ units, 2d term, summer quarter (CATHCART) MTWThF 10, TTh 2:05

29. Bailments and Carriers. Bailments in general, including bailments for hire, for services to be performed, and for hired use. Special classes of bailments involving ordinary liability: pledges; warehousemen. Special classes of bailments involving exceptional liability; innkeepers; common carriers of goods; common carriers of passengers. Case book to be announced.
4 units, autumn quarter (LARREMORE) [Not given in 1917-18.]

30. Sales.—Subject matter of the contract; transfer of property and title; destruction of the goods and risk of loss; obligations of seller and buyer; rights of unpaid seller against the goods; remedies of the seller on the contract; remedies of the buyer on the contract; Statute of Frauds. Woodward, Cases on Sales.

6 units, winter quarter (VERNIER) MTWThFS 10

31. Bills and Notes.—Negotiability; form and inception, form of bill and of note, acceptance, delivery, consideration; negotiation, transfer, holder in due course; liability of parties, maker and acceptor, drawer and indorser, transferor; discharge; effect of the Negotiable Instruments Law and California statutes. Colson's Huffcut's Cases on Bills and Notes.

6 units, spring quarter (DALZELL) MTWThFS 8

32. Partnership.—Nature of a partnership, its purposes, and members; creation of partnerships; nature of partner's interest; firm name and good will; mutual rights and duties of partners; actions between partners, at law and in equity; powers of partners; liability for acts of partners in contract and tort; general liability of partners; dissolution and notice; consequences of dissolution; dissolution agreements respecting debts; distribution of assets to creditors, and between partners; limited partnerships. Case book to be announced.

4 units, winter quarter (LARREMORE) [Not given in 1917-18.]

33. Private Corporations.—The nature of a corporation; the formation and organization of corporations; irregular incorporation; corporate powers; *ultra vires;* promoters; directors; shareholders; creditors; stock issue and payment, transfer. Open to third-year law students only. Warren (2d ed.), Cases on Corporations, and selected California cases.

6 units, autumn quarter (HUSTON) MTWThFS 10

34. Insurance.—Marine, fire, and life insurance. Insurable interest in various kinds of policies; concealments; misrepresentations; warranties and other matters affecting the validity of the contract; amount of recovery; subrogation; waiver, estoppel, election; powers of agents; assignees and beneficiaries.

4 units, summer quarter (HUSTON) [Not given in 1917-18.]

35. Suretyship.—Personal suretyship compared with real suretyship (mortgages, pledges, liens, etc.); suretyship obligations compared with insurance and indemnity obligation; guaranty and other forms of suretyship in relation to the Statute of Frauds; suretyship in transactions

involving negotiable instruments; fidelity contracts and judicial bonds; surety's defenses due to original defects in his obligation or to its subsequent discharge; surety's right to subrogation, indemnity, contribution, or exoneration; creditor's right to surety's securities. Ames, Cases on Suretyship.

4 units (VERNIER) [Not given in 1917-18.]

36. Mortgages.—All forms of mortgage security, both real and chattel; essential elements of legal and equitable mortgages; legal and equitable rights, powers and remedies of mortgagor and mortgagee with respect to title, possession, rents and profits, waste, collateral agreements, foreclosure, redemption; priorities; marshaling; extension of mortgages; assignment of mortgages; discharge of mortgages. Kirchwey, Cases on Mortgage.

4 units, winter quarter (DALZELL) TThS 9, M 2:05

37. Equity I: Contracts.—Development and nature of equity jurisdiction; specific performance of contracts; reformation and rescission of contracts. Ames, Cases on Equity Jurisdiction, Vols. I and II.

3 units, winter and spring quarters (KIRKWOOD) TWF 11

38. Equity II: Trusts.—The Anglo-American system of uses and trusts. The creation, the transfer, and the extinguishment of all forms of trust interests, express, resulting, and constructive; priorities between competing equities; the construction of trust dispositions; the special doctrines of charitable trusts. Ames, Cases on Trusts (2d ed.).

6 units, autumn quarter (BINGHAM) MTWThFS 8

39. Equity III: Torts and Special Equitable Remedies.—Specific reparation and prevention of torts; bills of interpleader; bills of peace; bills *quia timet;* cancellation of contracts, removal of clouds on title; perpetuation of testimony; bills to secure rights of future enjoyment; bills of account. Ames, Cases on Equity Jurisdiction, Vols. I and II.

4 units, spring quarter (KIRKWOOD) MTThF 10

40. Damages.—Respective functions of court and jury in estimating damages; exemplary, liquidated, nominal, direct, and consequential damages; avoidable consequences; counsel fees; certainty, compensation, damages for non-pecuniary injuries; value; interest; and damages in certain actions of tort and contract. Mechem and Gilbert, Cases on Damages (2d ed.).

3 units, winter quarter (LARREMORE) [Not given in 1917-18.]

41. Bankruptcy.—Jurisdiction of the United States and the several States; who may be a bankrupt; who may be petitioning creditors; acts of bankruptcy; what property passes to the trustee; provable

claims; duties and powers of the bankrupt and his trustee; protection, exemptions, and discharge. Williston, Cases on Bankruptcy.

4 units, spring quarter (VERNIER) TThF 8, W 2:05

42. Common Law Pleading.—The principal forms of action: their scope; the necessary allegations; methods of pleading defenses. General principles; concerning substance; concerning form; objection to defects; curing defects; dilatory objections; cross-demands. Whittier and Morgan, Cases on Common Law Pleading.

4 units, autumn quarter (WHITTIER) MWFS 9

43. Code Pleading.—The civil action; parties; splitting and joining actions; the complaint, including the facts constituting the cause of action, the methods of stating them, and the prayer for relief; the answer, including general and specific denials, affirmative defenses and counterclaims; the demurrer; the reply; motions; bills of particulars; amendment and aider: construction of pleadings. Prerequisite: course 36. Selected cases.

4 units, spring quarter (CATHCART) MTFS 9

44. Evidence I.—Introductory topics: Witnesses: competency; privilege; examination; impeachment; rehabilitation. Rules of exclusion: conjectural evidence; character evidence; hearsay and the exceptions to its exclusion; opinion. The proof of writings; authorship; contents. Real evidence. Open to students having 50 units of credit in law. Thayer, Cases on Evidence (2d ed.).

3 units, winter and spring quarters (WHITTIER) MWF 11

45. Evidence II.—This course deals with certain procedural and substantive law topics commonly considered in connection with evidence though not strictly a part of that subject. They are: functions of court and jury; judicial notice; presumptions; burden of proof; the parol evidence rule including construction of instruments. The course should be preceded by Evidence I when practicable. Open to students having 60 units of credit in law. Thayer, Cases on Evidence (2d ed.).

3 units, autumn quarter (WHITTIER) TTh 9, M 11

46. California Practice I.—Organization and jurisdiction of courts; court records and files; proceedings prior to judgment, including: service and return of summons and motions relating thereto, appearances, provisional remedies, such as attachment, arrest, etc., *lis pendens*, the trial, exceptions and findings, verdict; the judgment, its entry and satisfaction; proceedings subsequent to judgment, including: stay of execution, costs, execution, motion for new trial, appellate proceedings; probate and administration proceedings. Prerequisite: course 37.

Open to students having 50 units of credit in law. California Code of Civil Procedure; also selected California cases.

2 units, autumn and winter quarters (Hill) (autumn) S 11, W 2:05; (winter) TTh 7:15 p.m.

47. California Practice II.—Trial practice, special proceedings, including writs of certiorari, mandamus, and prohibition; introduction to jurisdiction and procedure of Federal courts. Prerequisites: courses 43 and 46. Open to students having 50 units of credit in law. California Code of Civil Procedure; also selected California cases.

2 units, spring quarter (Hill) TTh 7:30

48. Moot Court.—

A. Instruction in Legal Bibliography and the use of law books.

B. Argument of cases on submitted statements of facts; briefs; preparation of opinions.

4 units, spring quarter (Larremore) [Not given in 1917-18.]

Special Lectures

In addition to the regular professional courses, a few special lectures, most of them of a practical character, are given each year by experienced lawyers of the California Bar.

Courses in Other Departments

Courses offered by other departments of the University are open to pre-legal and law students. Of special interest and importance are the course in Legal Latin in the Latin Department, the courses in Constitutional History in the History Department, and various courses in Economics and Political Science.

LIBRARY

George Thomas Clark, Librarian.
Charles V. Park, Assistant Librarian.
Helen Binninger Sutliff, Chief Cataloguer.
Alice Newman Hays, Reference Librarian.
Elizabeth Hadden, Chief of Order Department.
Lucia May Brooks, Chief of Serial Department.
Louise Ophüls, Medical Librarian.
Raymond Rudolph Griffin, Law Librarian (autumn quarter.)
Leonard Saxton Lyon, Law Librarian (beginning winter quarter).

The Library is open during term time on week days from 8 a.m. to 10 p.m., except on Saturdays, when it is closed at 5 p.m. During vacations the hours are from 8:30 a.m. to 4:30 p.m., Saturdays to 12:30 p.m. The shelves are open to members of the faculty, and to students engaged in advanced work upon the recommendation of their instructors. Books, other than works of reference, not required for class use, are lent for a period of two weeks. A handbook giving more complete information relative to the Library and how to use it has been published and will be mailed upon request.

Including the departments of Law and Medicine the Library contains upward of 295,000 volumes. The income of the Jane Lathrop Stanford Jewel Fund, certain other special funds, and fees provide amply for its maintenance and growth. Noteworthy special collections are as follows:

The Jordan Library of Zoology.—A collection consisting largely of works on ichthyology, to a considerable extent made up of a vast number of authors' separates, which have been accumulated by Chancellor Jordan, bound in convenient form, indexed, and catalogued. The more voluminous publications, such as the works of Cuvier, Lacépède, Bloch, Bleeker, Gunther, and others, are well represented. These, supplemented by the proceedings of various societies and institutions, make a collection of books of great value to advanced students and investigators in ichthyology. The library is conveniently arranged, and is situated in the Zoology building near the laboratories and collections.

The Barbara Jordan Library of Birds.—A memorial collection presented by Chancellor Jordan, and to which frequent additions are made. While some of the older texts are not represented, it is a good working library of ornithology and contains the principal modern works on the subject.

The Hopkins Railway Library.—A collection of approximately 10,000 volumes and pamphlets dealing with the subject of transportation. In 1892 Mr. Timothy Hopkins, of San Francisco, presented to the University his private library on railroads, consisting of about 2,000 books, personally providing for its maintenance and growth for many years. The collection is shelved by itself in one of the seminary rooms. It is general in scope, intended to embrace all subjects touching on the building, maintenance, and operation of railways. It is especially rich in state and government reports, as well as in reports of individual railroads both in the United States and Europe, with much material pertaining to their history.

The Hildebrand Library.—In 1895 the University acquired the

library of Professor Hildebrand, of Leipzig, containing more than 5,000 volumes and pamphlets relating largely to Germanic languages and literature, the seventeenth and eighteenth centuries being especially well represented, and including also a notable collection of three hundred old dictionaries. The value of the books is greatly enhanced by the manuscript notes of Professor Hildebrand.

The Flügel Collection, which formed the more important part of Dr. Ewald Flügel's library, was purchased in 1915 and numbers about 4,000 volumes. It contains copies of the 15th century editions of Vincent of Beauvais, a number of important and rare 16th century writers (e. g., Bale's Catalogus, 1557-9; Luther, 1539-59; More, 1557; Holinshed, 1586), and a good many 17th century 4tos and folios (Islip's Chaucer, Selden, Browne, Stow, etc.). The history of philology is well illustrated (Spelman, Junius, Hicks, et al.). The library has now a solid foundation in these fields and can supply a large amount of material for the study of certain aspects of the 16th and 17th centuries.

The Thomas Welton Stanford Australasian Library.—A good working collection of books relating to Australia and New Zealand. It is especially rich in early voyages, travels, and descriptions. Several hundred volumes of parliamentary reports of the Australian states, the Commonwealth, and New Zealand, are included. The publications of learned societies, such as the Royal Societies of New South Wales and Victoria, the Australian Museum, and the New Zealand Institute, are well represented, while considerable pamphlet material also is available.

British Parliamentary Papers.—An unusually complete set of British government documents from 1801 to date, some 6,500 volumes, of which the first 3,500 volumes constituted a special gift to the Library, made by Mrs. Stanford in 1900. The set contains not only the full papers laid before Parliament from the customary departments of government, such as diplomatic, colonial, and financial papers, but also the most valuable reports of the special committees and royal commissions, offering material for research in almost every field of knowledge. Taken in connection with the Library's excellent file of United States Documents, and of the governmental publications of Canada, and of Australasia, the collection offers unusual facilities for study in the public undertakings of English-speaking peoples.

The Jarboe Collection on the French Revolution.—Acquired in 1910. It contains original materials, principally in French, relating to the Revolutionary and Napoleonic era. Two features of the collection are of particular interest to advanced students of history—the original

and contemporaneously printed pamphlets, of which many are unusual; and the memoirs, of which there is a comprehensive selection.

The Law Library.—A library of about 22,000 volumes, selected with care and adequate for the study of English and American law. It contains practically complete sets of the reports of the courts of England, Scotland, Ireland, Canada, the United States and the several states, together with a valuable collection of statutes, treatises, and periodicals.

The Lane Medical Library.—Founded by the directors of Cooper Medical College in accordance with the bequest of Mrs. L. C. Lane. The Library contains about 45,000 volumes, and is particularly rich in its collection of medical and allied periodicals. The leading domestic and foreign journals are currently received. The new library building, erected in 1912, is a fireproof structure of Colusa sandstone, and is located opposite the other medical buildings, on the corner of Sacramento and Webster streets, San Francisco.

The Branner Geological Library.—The Geological Library (room 333) is the result of twenty-five years of painstaking acquisition by Dr. John Casper Branner. It includes a vast wealth of material relating to geology, paleontology, mineralogy, geography, mining and metallurgy. It is especially well equipped with files of journals and the transactions of scientific societies, together with a large collection of state and government reports.

MATHEMATICS

Robert Edgar Allardice, Rufus Lot Green, Hans Frederick Blichfeldt, Professors.
Laura Cornelia Clark, Assistant.

The courses in this department have been arranged to meet the wants of two classes of students—students whose major subject is Mathematics, and students who, while taking their major in some other department, desire to include some mathematics in their course. Students in Engineering are provided for in the Department of Applied Mathematics.

For students whose major subject is Mathematics the following programme of work is recommended: In the first year, courses 3 and 4; in the second year, courses 5 and 6; in the third year, courses 10, 11, and 12; while the work during the fourth year and for graduate stu-

dents may be selected from the remaining courses, and from the Department of Applied Mathematics. The advanced courses will, for the most part, be given once in two or once in three years, and it is hoped that the advanced students will thus have the opportunity of studying the more important branches of modern mathematics.

Students whose major subject is mathematics are recommended to begin the study either of French or of German in their freshman year.

Students who desire to take one or more years of Mathematics as a part of a liberal training are recommended to begin their work in this department with one or more of the courses 1, 2, 3, and 7.

The TEACHER'S RECOMMENDATION.—For the High School Recommendation in Mathematics the following courses are required: 1, 2, 3, 4, 5, and 6 or 9.

1. Trigonometry.—Elementary course with applications involving logarithmic calculation.

3 units, autumn and *winter quarters (CLARK) (autumn) MWF 9; (winter) MWF 10

2. Solid Geometry.—Elementary course.

3 units, winter quarter (CLARK) MWF 11

3. Algebra.—Fundamental laws, degree, symmetry, indeterminate coefficients, remainder theorem, factors, introduction to theory of equations. Presupposes entrance credit in elementary algebra.

5 units, autumn and winter quarters (CLARK) MTWThF 8

3a. Algebra.—Binomial theorem, equations, progressions, logarithms, interest, annuities, insurance problems in investment. Presupposes entrance credit in Algebra.

5 units, autumn and winter quarters (GREEN) MTWThF 8

4. Coördinate Geometry.—An elementary course in the analytic geometry of the conic sections. Presupposes course 3.

5 units, spring quarter (GREEN) MTWThF 8

5. Coördinate Geometry.—A continuation of course 4.

5 units, autumn quarter (GREEN) MTWThF 10

6. Differential and Integral Calculus.—An elementary course.

5 units, winter and spring quarters (ALLARDICE) MTWThF 10

7. General Course.—A brief and elementary survey of the principles of algebra, trigonometery, coördinate geometry, and calculus. Presupposes elementary algebra and plane geometry.

5 units, winter and spring quarters (BLICHFELDT) MTWThF 10

8. Selected Readings.

2 units, autumn and winter quarters (BLICHFELDT) By arrangement

9. Plane Geometry.
3 units, winter quarter (ALLARDICE) MWF by arrangement

10. Advanced Calculus.—A continuation of course 6.
5 units, autumn quarter (ALLARDICE) MTWThF 9

11. Differential Equations.
5 units, winter quarter (BLICHFELDT) MTWThF 9

12. Theory of Functions.—An elementary course.
5 units, spring quarter (ALLARDICE) MTWThF 9

15. Determinants and the Theory of Equations.
4 units, autumn quarter (BLICHFELDT) MTThF 10

19. Modern Coördinate Geometry.
5 units, winter quarter (GREEN) MTWThF 9

20. Definite Integrals.
4 units, autumn quarter (ALLARDICE) MTWF 11

21. Projective Geometry.
4 units, winter quarter (ALLARDICE) MTWF 11

22. Non-Euclidean Geometry.
4 units, spring quarter (BLICHFELDT) MTWF 11

23. Reading Course.
3 units, winter quarter (ALLARDICE) By arrangement

MEDICINE

WILLIAM OPHÜLS, Dean.
GEORGE BURBANK SOMERS, Secretary of the Medical Faculty.

BUILDINGS AND EQUIPMENT

The main buildings in San Francisco occupy four fifty-vara lots bounded by Clay, Sacramento, and Webster streets, and consist of the Clinical and Laboratory Building, including Lane Hall and Lane Hospital, a modern building in brick and stone, with a capacity of one hundred and eighty beds, and the Stanford University Hospital, just completed, with a present capacity of one hundred beds but which eventually will accommodate one hundred and eighty patients. The Lane Medical Library is situated on the corner of Sacramento and Webster streets, opposite the Clinical and Laboratory Building. The nurses are housed in several buildings on Clay street opposite the Lane Hospital. The Clinical and Laboratory Building has recently been remodeled and is devoted entirely to out-patient clinics and laboratories.

Clinical Opportunities

The Stanford Hospitals

LANE HOSPITAL

Lane Hospital was designed as a Teaching Hospital and built by Dr. Levi Cooper Lane. It is under the immediate control of the Clinical Committee appointed from the Medical Faculty by the President of the University with the approval of the Board of Trustees. It is a general hospital receiving both private and clinic patients, situated at Clay and Webster streets and directly connected with the Clinical and Laboratory Building. In its clinical department there are over one hundred beds used for purposes of teaching. These are arranged into five wards, one each for Surgery, Medicine, Gynecology, Obstetrics, and Pediatrics. As the patients in these clinical beds are sent in largely from the Out-patient clinic and as they remain in the Hospital for short periods of time only, unusual opportunity is offered for the study of selected cases.

STANFORD UNIVERSITY HOSPITAL

The new Stanford University Hospital was formally opened December 22, 1917. This is a substantial reinforced concrete structure, with a capacity of about one hundred and eighty beds, and is provided with the latest improvements in equipment and arrangement. Special attention has been given to the operating room floor, the hydrotherapeutic department, Zander room, X-ray department, the metabolism laboratory, and the numerous sun parlors.

Course in Emergency Medicine and Surgery

Students in the senior year in medicine are offered an opportunity to do emergency work in Medicine and Surgery at the various Emergency Hospitals in the City, under the direction of the Chief Surgeon of the Emergency Service. The course is optional, but students signing up for the work are expected to spend at least 120 hours of time on it; hours to be arranged so that they do not conflict with the regular class work. Upon completion of the course students will be expected to pass an examination to the satisfaction of the Chief Surgeon. Failure to do so will count against them in their credits for hospital appointment; otherwise credit will be given by the University for work performed.

Course in Military Medicine

During 1917-18 three hours of work in Military Medicine was made compulsory for men medical students.

PATIENTS' FUND

The Trustees of the University have established a fund known as the "Patients' Fund," the income of which is used for the support of free beds. This fund, to which contributions of any size can be made at any time, originated from money received from former patients of Lane Hospital. Much of it has been given by grateful clinical patients.

SAN FRANCISCO HOSPITAL

At the present time the Medical School controls over one hundred beds in the new San Francisco Hospital, averaging about a thousand patients per year. This hospital, erected at an expense of two million dollars, is one of the finest and most complete structures of its kind in America. Possessing separate buildings for the care of contagious diseases and of tuberculosis, in addition to the main group for general surgical and medical cases, there is centered within the hospital grounds, convenient for teaching purposes, an abundance as well as a great variety of clinical material.

OUT-PATIENT DEPARTMENT

The lower floor of the Clinical and Laboratory Building is devoted entirely to the Surgical Out-patient Clinic and its various subdivisions; the second floor to the Medical Out-patient Clinic with its subdivisions; the three upper floors contain the Pathological Museum and the laboratories of Clinical Pathology, Dermatology, Experimental Medicine, Neurology, Pathology, Pediatrics, Pharmacology, Obstetrics and Gynecology, Serology, and Experimental Surgery. The laboratory of Clinical Pathology and the Out-patient Department are separated only by a short corridor from the clinical wards of the Hospital, so that both in- and out-patients are equally available for teaching purposes. About seventeen thousand new patients were received during the past year, with a total number of visits of about ninety thousand.

The tuberculosis clinic is held in close coöperation with the San Francisco Association for the Study and Prevention of Tuberculosis. The Associated Charities sends to the clinic a portion of its maternity cases, and provision is also made for the care of a portion of their sick poor. The San Francisco Maternity contributes a considerable sum towards the support of the women's clinics. This is particularly devoted to out- and in-patient obstetrics.

DENTAL CLINIC

In connection with the Out-patient Department an Emergency Dental Clinic is maintained and is under the direction of Dr. Fred Wolfsohn.

Hospital Internships

Twelve internes, a house officer, and an assistant house officer are appointed annually at the Lane Hospital. Six of these are Senior Internes and have a continuous service for one year with the option of renewal in any of the following divisions: Medicine, Pediatrics, Surgery, Obstetrics and Gynecology, or Actinography. Six Junior Internes, with a rotating service, are likewise appointed. In addition to their other services they are assigned in rotation to a two months' service in Psychiatry at the Napa State Hospital. Five of these are eligible for Senior Interneships later. An Externe is also appointed for the Eye, Ear, Nose, and Throat Department. Six interneships, including a rotating service and also two months at the Napa Hospital, and appointments as surgical house officer and medical house officer are also available in the Stanford service at the San Francisco Hospital, as are also several other interneships at other hospitals in the City and State.

Library Facilities

The Lane Medical Library, founded by the Directors of Cooper Medical College, as provided by the will of Mrs. Levi Cooper Lane, comprises about 45,000 volumes. One of the most important early acquisitions of the library was the purchase from the New York Academy of Medicine of their duplicate collection made up largely of books originally belonging to the once well known Medical Library of the New York Hospital. About 500 periodicals are currently received, and the numerous files of bound volumes are practically complete.

Cards of current medical accessions are received from the Library of Congress and from the John Crerar Library in Chicago. These, with the catalogues of the Surgeon General's Library, facilitate borrowing books from three great libraries. Loans are also made to and from the University Library at Stanford, which contains about 250,000 volumes.

Admission to the School of Medicine

(Applicants for admission to the first five quarters in medicine should communicate with The Registrar, Stanford University, California; those who are prepared to enter the upper classes of the Medical School (*i.e.*, from the sixth to the twelfth quarter), should communicate with The Dean, Stanford University Medical School, corner Sacramento and Webster streets, San Francisco, Cal.)

With the introduction of the Four-Quarter System, students may be able to reduce the total number of years spent on the combined premedical and medical curriculum by one year.

The State Law, however, requires that applicants for licensure show records of four medical courses each of thirty-two weeks' duration, but not necessarily pursued continuously or consecutively, and that at least ten months shall have intervened between the beginning of any course and the beginning of the preceding course.

Students contemplating studying medicine elsewhere than at the Stanford Medical School are advised to write early in their undergraduate course to the Deans of the medical colleges which they may wish to enter, in order to learn the exact entrance requirements so that no time may be lost in transferring from one institution to another.

Three years of collegiate work in Stanford University (approximately 135 unit hours), or its equivalent as accepted by the Committee on Advanced Standing, is required for admission to the School of Medicine. This preparatory training must include Chemistry (General Inorganic, Qualitative and Quantitative Analysis, and five units of Organic Chemistry), one year of Physics, one year of Physiology or Biology, with laboratory work in each, and such a reading knowledge of French or German as shall be acceptable to the School of Medicine. It is recommended that both German and French be studied and that a lecture and laboratory course be taken in Psychology.

The following courses given in the University cover the requirements in the particular subjects prescribed for admission to the School of Medicine: Chemistry 1, 2, 3, *a*, *b* (General Inorganic, 13 units), *d*, *f* (Qualitative and Quantitative Analysis, 10 units), 10 (Organic, 5 units); Physics *7a*, *7b*, *7c* (Mechanics and Heat, Electricity and Light, 13 units); Zoology 1 (General Zoology, 5 units), 11 (Comparative Anatomy of the Vertebrates, 5 units). Either Botany 1*a*, 1*b*, or 1*c* (Elementary, 5 units), or 5 additional units in Zoology; either Romanic Languages A1, 2, 3, 21, 22, 23 (first-and second-year French, 30 units), or Germanic Languages 1, 2, 3, 21, 22, 23 (first- and second-year German, 30 units).

Candidates for admission to the School of Medicine are permitted to register with one condition (except in Chemistry as prescribed by the Association of American Medical Colleges). This condition must be removed before the beginning of the second year in medicine.

(The State Law governing the practice of Medicine in California prescribes that every person before practicing Medicine or Surgery must produce satisfactory testimonials of good moral character and a diploma issued by some legally chartered medical school approved by the Board of Medical Examiners, the requirements of which school shall have been at the time of granting such diploma in no degree less

than those prescribed by the law. The main provisions of this law are that the applicants must show records of four medical courses each of thirty-two weeks' duration, but not necessarily pursued continuously or consecutively, and that at least ten months shall have intervened between the beginning of any course and the beginning of the preceding course, following a preliminary preparation, at present of a high school course or specified equivalent and after January 1, 1919, in addition, a course which includes at least one year of work of college grade in each of the subjects of Physics, Chemistry, and Biology. The specified four years' medical course includes 4000 schedule hours, embracing the usual medical curriculum. In the course of study outlined the hours required are hours of actual work in the class room, laboratory, or hospital, and at least eighty per cent of actual attendance is required.)

Graduates of the medical school are advised to take the examinations of the National Board of Medical Examiners, if possible. Several states already recognize the licentiates of the National Board and it is expected that before long many more states will do so. It seems likely, therefore, that within a reasonable number of years a licentiate of this Board will have the privilege of practicing medicine in all or nearly all states of the Union.

Pre-clinical Students

Students who have obtained 135 units credit including the pre-medical subjects, in any Department of the University, may register in medicine without relinquishing their registration in their Major Department. All prospective as well as registered medical students must also enroll in the Pre-clinical group. Students whose names begin with the letters A-F will enroll with the department of Anatomy, from G-M with the Department of Bacteriology, and from N-Z with the Department of Physiology. Medical students who are unable to complete both the requirements of major department and the first year in medicine by the end of their senior year, may nevertheless be eligible for the degree of A. B. in the Pre-clinical group. The work of these students will be supervised by the Committee on Academic Matters of the Medical School and on completion of the first year in medicine they will be recommended for the degree of Bachelor of Arts in the Pre-clinical group.

It is strongly advised that students obtain special training in some subject preparatory to medicine and broaden their foundation by devoting more than three years to this work. It is further advised that

all prospective medical students acquire a reading knowledge of both French and German.

Students who have included in their course of study the subjects required for admission to the Medical School while retaining their registration in their Major Department as candidates for the degree of A. B., must also enroll in the School of Medicine during the fourth year (*i. e.*, at the beginning of the tenth quarter in the University) and pay the fees of the School in order that this year may count as part of the four years' registration in Medicine as required by the law of the State and the five years' work required by the regulations of the University. Tuition fees are required for but four years of the medical course.

Students are particularly warned not to postpone their registration in medicine, and they must have paid all medical fees of the first five quarters in medicine before coming to San Francisco.

Limitation of the Number of Students

The accommodations of the Medical School at San Francisco render it inadvisable to admit more than 25 students to each class. It will therefore be necessary to restrict the number of students to 25 in each class, commencing with the sixth quarter. There are no restrictions in regard to entrance to the first five quarters in medicine at Stanford University, but not all students entering the medical classes at Stanford University can be assured that they will be able to continue their medical studies at the University for more than five quarters.

Students once admitted to the sixth quarter may continue to graduation, provided scholarship and conduct are satisfactory, and that they present themselves for registration on the regularly appointed days. Places will not be held for such students after the regular registration days, except by special permission granted in advance by the Dean.

Students planning to continue their work at Stanford University after the first three quarters of registration in Medicine should notify the Dean in writing to that effect at as early a date as possible, and file a complete record of their preparatory, collegiate, and medical work with the Registrar before the end of the fifth quarter in Medicine. No one will be permitted to enroll in the sixth quarter in Medicine with less than 210 units of credits or with a condition in more than 5 units in any required subject, except by consent of the Dean, which must be confirmed by a special vote of the Faculty. Students must arrange their work at the University in such a way as to commence their studies in San Francisco in the spring or autumn quarters. This arrangement

will permit a certain number of additional students each year to come to San Francisco besides the 25 mentioned above.

The Eight Years' Curriculum

The combined eight years' curriculum—three years of college work and five years in medicine—leads to the degrees of Bachelor of Arts and Doctor of Medicine.

Special Workers

Physicians and others who are properly qualified, but not candidates for a degree, may be admitted to work in the School of Medicine with the permission of the Dean of the School and of the professor or professors concerned. Such persons shall be listed as Special Workers and pay such fees as are required by the Dean and the Executive Head of the Division concerned.

The Curriculum in Medicine

The required period of study for the degree of Doctor of Medicine is twelve quarters plus the interne year. The work of the first five quarters is given at Stanford University and is devoted to anatomy, bacteriology, chemistry, embryology, histology, neurology, experimental pathology, physical diagnosis, and physiology. The next seven quarters are devoted to work in the pharmacological, pathological, and clinical laboratories and in the hospital wards and the out-patient department in San Francisco. The last year is spent in hospital work.

In order to correlate the work of some of the divisions and to facilitate research in others, all courses in Medicine, except those in anatomy, bacteriology, chemistry, and physiology, are given in San Francisco. By reducing the number of required hours to approximately the number decided upon by the Association of American Medical Colleges, the student's opportunity for taking optional and elective courses has been increased and time obtained for thesis work.

Required Interne Year

All students are required to take a fifth practical year in Medicine before receiving the degree of Doctor of Medicine. Arrangements may be made so that the fifth year may be spent as worker in a laboratory. No tuition fee is required of internes.

Fees

The tuition fees of the Medical Department are $150 per annum for four years, payable in installments of $50 each quarter; $5 per quarter for the first five quarters, covering charges for material; and such

other deposits to cover breakage or loss of apparatus and materials as may be required in any department or division, these deposits being returnable, less charges for breakage, loss, or wear and tear of apparatus, or for materials used. The total deposits for this purpose may vary from $10 to $20 per annum.

Microscopes and Instruments

By action of the Medical Faculty taken May 12, 1912, students will be expected to supply themselves with microscopes. The Medical School offers the use of a microscope for the college term, not including the summer vacation, to students who do not possess instruments of their own, on deposit of $10 and a rental of $2 per quarter. This deposit, less the cost of necessary repairs, is refunded on return of the microscope. In the laboratories of physiology and histology and in embryology microscopes are furnished free.

All students are expected to provide themselves with a satisfactory blood counter for their own use, and such other pieces of individual apparatus as are essential to the required work.

Requirements for the Degree of Doctor of Medicine

The candidate for the degree of Doctor of Medicine must, according to the laws of the State, have attained the age of twenty-one years and have attended a medical college of recognized standing for four years. He must further have fulfilled the entrance requirements of the Medical School of Stanford University before enrolling as a medical student, have satisfactorily completed the required curriculum, passed all examinations, paid in full the required fees, and have spent the last three quarters preceding the interne year at the University. Physicians who have already received the degree of Doctor of Medicine are not received as candidates for this degree by the Stanford Medical School.

Regulations Concerning Theses

A thesis based as much as feasible upon research work will be required of each student. If the thesis is not completed previously, four curriculum hours in each of the last three quarters are to be devoted to its preparation under the supervision of one of the Heads of Divisions.

Students of Medicine may select the Division in which they desire to write their thesis, and if properly qualified may begin work on the same at any time before the beginning of the second quarter of their fourth year in Medicine. The topic for investigation or the subject matter for study shall be chosen with the advice and consent of the Executive Head of the Division concerned, and no change of subject

shall be made without the consent of the Executive under whose direction the work was begun. Except by special permission theses must be completed by the end of the fourth year in medicine.

Advanced Degrees in the Medical Department

The Divisions of the Medical Department are considered as equivalent to other departments of the University in respect to candidacy and requirements for the degrees of Master of Arts and Doctor of Philosophy, and all the foregoing regulations apply to these divisions and division faculties as to departments and department faculties, with the following modifications and limitations:

1. Candidates for these degrees must have received the degree of A. B. at Stanford, or an equivalent degree elsewhere, and must have completed all requirements for admission to the Department of Medicine, and such other requirements as each division faculty may prescribe.

2. Time spent in candidacy for the degree of Master of Arts or Doctor of Philosophy will not be counted toward the degree of Doctor of Medicine.

3. Candidates for these degrees in the divisions of Medicine, Surgery, and Obstetrics and Gynecology, must have received the degree of Doctor of Medicine.

SUMMER GRADUATE MEDICAL COURSE

The trustees and the Medical Faculty of Stanford University in 1914 inaugurated a Summer Graduate Medical School with the object of making available to the medical profession during the summer months the clinical laboratory, and hospital facilities of the Medical School. The session in 1917 extended for six weeks, from July 9 to August 17. The classes were given in San Francisco, in the Medical School Building, Sacramento and Webster streets; Lane Hospital, Clay and Webster streets; and the San Francisco Hospital 22dn street and Potrero avenue.

The Lane Medical Library of Stanford University of 45,000 volumes, situated just across the street from the Medical School Building, is open to all members of the Summer School.

The courses are designed primarily for the benefit of the profession, and are open to all licensed physicians or to graduates of recognized medical schools. By special arrangement, medical students are permitted to attend if they possess the necessary preparation. No formal certificates or University credits are given for attendance at

these courses, but a statement in the form of a letter from the Dean's Office is provided if desired. The fees have been arranged according to the cost of materials and the time required in the preparation of the work. As many courses as desired may be taken, the total fee being the sum of the fees for the individual courses taken, with $150 as the maximum fee. Students, however, are advised to concentrate their efforts upon one or two courses rather than to attempt to cover too wide a field. In the laboratory courses a deposit of $5 is required to cover breakage or loss or rental of microscope, subject to refund of the balance at the end of the course.

MEDICAL GROUP

1. *Clinical Medicine.* (HEWLETT) Daily, 10-12

The class is limited to twelve. The work is given in the medical wards of the Lane and San Francisco Hospitals. The hour from ten to eleven is spent in the personal examination of patients by those taking the course, two physicians being assigned to each patient. During the following hour two or more of the patients thus examined are demonstrated before the class as a whole. Special attention is given to physical diagnosis, to cardiac irregularities, to functional kidney tests and to the interpretation of laboratory and radiographic findings in diagnosis. Those desiring practical X-ray work, however, should register for the course listed below. Fee, $35.

2. *Roentgenography and Roentgen Therapy.* (BOARDMAN)
Daily, except Saturdays, 9-10

The class is limited to six. The work covers the field of X-ray diagnosis and treatment, especial attention being given to the study of gastro-intestinal diseases, with practical work in fluoroscopy, radiography, and radiotherapy. Fee, $35.

3. *Cutaneous Medicine and Syphilis.* (ALDERSON)

Special courses in cutaneous medicine and syphilis.

4. *Pediatrics.* (FABER) Daily, 9-10:30

Work given to a class of six. The course consists of clinical work in the Children's Clinic and in the Children's Ward of Lane Hospital. Opportunity is given to acquire the simpler laboratory methods of milk and stool analysis. Fee, $25.

SURGICAL GROUP

5. *Clinical Surgery.* (ELOESSER, COWAN)
T, 10-12; Th, 8:30-12, Lane Hospital;
MWF, 8:30-10:30, San Francisco Hospital.

The course consists of daily ward visits with bedside demonstrations; at the San Francisco Hospital the greater part of the time is devoted to surgery of the extremities, fractures and lesions of the bones and joints; special attention is paid to the relations of the various cases to *accident insurance.* At the Lane Hospital especial attention is given to abdominal conditions. One or two operating days a week. Fee, $35.

6. *Anatomy.* (Blaisdell)
Experimental fractures on the cadaver and laboratory technique. The laboratory is open and material available for those desiring work in dissecting (including the brain), histology, laboratory technique, surgical anatomy, and the study of fractures experimentally produced on the cadaver. Hours and fee by arrangement.

7. *Orthopedic Surgery.* (Ely, Langnecker)
A clinical course in orthopedic surgery in the Stanford Clinic and Lane Hospital. Five times weekly. Besides the routine work of the Orthopedic Department of the Stanford Clinic, special attention is given to the affections of the bones and joints, conditions resulting from faulty posture, the correction of deformities and paralyses by the most modern and efficient methods, including the fitting of braces and supports, mechanical therapy and physical therapy To this is added a weekly clinic at Lane Hospital by Dr. Ely. Fee, $35.

8. *Genito-Urinary Surgery.* (Rigdon) MWF, 8:30-10
The class is limited to five. The work consists of clinical studies and demonstrations of cases, and of operative clinics. The members of the class are expected to work in the out-patient department and in the clinic wards of Lane Hospital. Fee, $35.

9. *Clinical Ophthalmology.* (Barkan) MTWThF, 1:30-3:30
The class is limited to ten. The work consists of a clinical lecture from 1:30 to 2:30, covering the principles of refraction, diagnosis and treatment of external diseases, review of fundus conditions, relation of eye lesions to general medicine and operative methods; the hour from 2:30 to 3:30 is spent in practical work under the instructor's supervision. Operative clinic at 2:30 on Tuesdays. Fee, $35.

10. *Otology and Laryngology.* (McNaught) MTWThF, 3-4
The work includes general clinical studies and demonstrations of routine cases, with especial consideration of the physiology and pathology of the middle ear and labyrinth, and the surgical anatomy of the nose and throat, with specimens and operative demonstrations. Members of the class have the privilege of following the routine handling

of cases in the out-patient department and in the clinic wards of the Lane Hospital. Fee, $35.

OBSTETRICS AND GYNECOLOGY

11. *Practical Obstetrics.* (MOORE) MF, 2-3; with two weeks daily service, during which time students are to live in the clinic and devote their entire time to Obstetrics. The work consists of routine obsterical work with talks and demonstrations on pelvic measurements, antepartum examinations, confinement in patients' homes and in hospitals, postpartum care and examination of patients six weeks after delivery. Fee, $25.

12. *Gynecology.* (SPALDING) Out-patient Department, daily, 10-11; Operating Room, TF, 2; Laboratory, Th, 2-4
The class is limited to six. The work includes practical instruction in gynecological diagnosis, clinical studies and demonstrations of cases, medical treatment, operative demonstrations, and the study of gross and microscopical specimens of gynecological material. Fee, $35.

13. *Cystoscopy.* (BEASLEY) MWF, 8-9
The class is limited to two sections of not more than three students each; nine periods per section. The work includes demonstrations and practical instruction in cystoscopy, urethral catheterization, and methods of estimating renal function. Fee, $35.

14. *Anesthesia.* (PALMER)
The class is limited to six. The work consists of personal instruction on the various anesthetics. The members of the class have the privilege of administering the routine clinic anesthesias under the direction of Dr. Palmer. Fee, $35.

15. *Pathology.* (Clinical Pathological Conferences) (OPHÜLS)
The work consists of the presentation of specimens obtained at the clinical autopsies in the course of the week with a brief discussion of the clinical data. Two hours, once a week. If desired, the material is at the disposal of the members of the class for more intensive study in the laboratory. On request, special subjects are taken up and illustrated by demonstrations of museum specimens and microscopical slides. Time arranged to suit the convenience of those taking the course. Fee, $25.

PRE-NURSING CURRICULUM

The University offers a combined curriculum consisting of three years of university work at Stanford and two years in nursing at the University Hospital, San Francisco, which leads to the degrees of *Bachelor*

of Arts and *Graduate Nurse.* This course is designed particularly for those who wish to prepare themselves for administrative, teaching, social service, or public health work. As tentatively outlined, the prescribed subjects at the University are as follows:

Modern Language	15 units
Chemistry	9 to 13 "
Physics	5 to 10 "
Zoology or Botany	5 to 10 "
Anatomy	10 "
Physiology	10 "
Bacteriology	4 to 6 "

As electives the following subjects are recommended to prospective nurses: Physiological Chemistry, English, Education, Psychology, Economics, and History. Students will have to complete 135 units of work at the University, and it is expected that they will be able to finish the theoretical and nursing work required in the city in two years.

Students intending to take this course should confer with Professor C. S. Stoltenberg, Stanford University, and with Miss C. E. Hogue, Superintendent of Nurses, Lane Hospital, San Francisco. Prospective students will be required to take their probationary period as nurses (three months) early in the course, while they are still at the University. This work can be arranged for during the summer quarter.

THE CURRICULUM IN MEDICINE

First Quarter (Autumn)	Hours per week
Physiological Chemistry (17 and *l*)	17
Histology (Anatomy 1)	18
	35
Second Quarter (Winter)	
Physiology 3 (Muscle, Nerve, Central Nervous System)	9
Embryology (Zoology)	9
Anatomy (Dissection, etc.; 2, 3, 4, 5)	15
	33
Third Quarter (Spring)	
Physiology 4 (Circulation, Respiration, Digestion, and Metabolism)	9
Bacteriology 1 (General Bacteriology)	6
Anatomy (Dissection, etc.; 2, 3, 4, 5)	15
	30

Fourth Quarter (Autumn)

Bacteriology 2 (Pathogenic Bacteria)	10
Anatomy (Dissection, etc., 2, 3, 4, 5)	12
Neurology (Anatomy 6)	9
	31

Fifth Quarter (Winter)

Experimental Pathology (Bact. and Exp. Path. 4)	9
Physiology 5 (Sense Organs)	9
Physical Diagnosis	4
	22

Sixth Quarter

Medicine 1 (Physical Diagnosis)	4
Medicine 2 (Clinical Pathology)	4
Pharmacology and Materia Medica 1 (a)	9
Pathology 1 (General)	6
Surgery 1 (Principles)	4½
Surgery 2 (Fractures and Dislocations)	2
Surgery 3 (Surgical Anatomy)	1½
Surgery 4 (Surgical Diseases of Extremities)	2
	33

Third Year

Hygiene 1	1
Medicine 3 (Diseases of Thoracic Organs)	4
Medicine 4 (Diseases of Digestive Tract)	4
Medicine 5 (Infectious Diseases)	3½
Medicine 6 (Diseases of Kidneys, Blood and Met.)	3
Medicine 11 (Physical Therapeutics)	2
Medicine 13 (Practical Therapeutics and Prescr. Wr.)	3
Medicine 18 (Pediatrics Recitation)	4
Medicine 19 (Infant Feeding, etc.)	2
Medicine 20 (Contagious Diseases)	2
Medicine 23 (Neurology)	4
Medicine Electives	14
Pharmacology and Materia Medica 1 (b)	5
Pathology 3 (Special)	12
Surgery 5 (Diseases of Abdomen)	2
Surgery 6 (Diseases of Head and Neck)	2
Surgery 7 (Diseases of Thorax)	1

Surgery 8 (Set Clinic)	6
Surgery 9 (Out-patient Clinic)	4
Surgery 10 (Ward, Lane Hospital)	2
Surgery 11 (Laboratory, Tumors)	3
Surgery 12 (Lab., General Surgical Pathology)	6
Surgery 13 (Preliminary Ophthalmology)	1
Obstetrics and Gynecology 1 (Laboratory Course)	4
Obstetrics and Gynecology 2 (Obstetrics Lect.)	2
Obstetrics and Gynecology 3 (Obstetrics Lect.)	2
Obstetrics and Gynecology 4 (Obstetrics Lect.)	2
Obstetrics and Gynecology 5 (Ward Rounds)	1
	101½

Fourth Year

Hygiene 1	2
Medicine 25 (Ward, S. F. Hospital)	7
Medicine 31 (Cutaneous Medicine)	2
Medicine 32 (Pediatrics and Cutaneous Medicine)	6
Medicine 34 (Psychiatry)	4½
Medicine 35 (History of Medicine)	1
Medicine 36 (Jurisprudence)	1
Medicine Electives	11
Surgery 14 (Clinic, Lane Hospital) / Surgery 15 (Clinic, S. F. Hospital)	10-11
Surgery 19 (Orthopedic Surgery)	3
Surgery 20 (Genito-Urinary)	5
Surgery 21 (Ophthalmology)	5
Surgery 22 (Otology, Rhinology, and Laryngology)	6
Surgery Electives	3
Obstetrics and Gynecology 6 (Gyn. and Manikin Ex.)	2
Obstetrics and Gynecology 7 (Outpatients Obs.)	4
Obstetrics and Gynecology 9 (Ward Rounds)	1
Obstetrics and Gynecology 10 (Women's Clinic)	1
Obstetrics and Gynecology 11 or 12 (Operating R.)	1
Obstetrics and Gynecology 13 (Gyn. Conference)	2
Obstetrics and Gynecology 14 (Gyn. Conference)	2
Military Medicine	3
Thesis	12
	94½-95½

Fifth Year (Hospital Year)

After completion Clinical Examinations in Medicine, Surgery, and Obstetrics.

I. DIVISION OF ANATOMY

†Arthur William Meyer, Frank Mace McFarland, Professors.
Clara S. Stoltenberg, Associate Professor.
Edgar Davidson Congdon, Assistant Professor.

Required Courses

1. General Histology and Microscopic Anatomy.—A course dealing with the elementary structure and vital activities of the animal cell. the histology and development of the tissues and their combination into the organs of the Vertebrates, with especial reference to the Mammalia. Elementary histological technique is taught during the course. Open to students who have had a year's biological training, or its equivalent. (Three lectures and fifteen laboratory hours per week.)

8 units (Total, 198 hours.) (McFarland)
Autumn quarter, Lec. MWF 9; Lab. MWF 10-12, TTh 9-12, W 1:05-4:05.
Repeated in spring quarter, Lec. MWF 11; Lab. MTWThF 1:05-4:05.

2. Osteology.—Students will be expected to familiarize themselves thoroughly on their own initiative, with the surface anatomy of the bones of the skeleton. This individual work will be supplemented by the laboratory study of special aspects of the subject under the supervision of instructors. Not given as a separate course. Credit is included in the courses in dissection of which osteology forms a part.

(Stoltenberg) Winter quarter, F 9-12; spring quarter, M 1:05-4:05

3-4-5. Dissection of (3) the Head, Neck, and Thorax; (4) the Upper Extremity; (5) the Abdomen and Lower Extremity.—These courses are given simultaneously throughout the year and may be begun at any time. No one will be assigned to less than one of the above parts nor will credit be given for less, save by special arrangement.

8, 3, 6, units respectively (Total, 462 hours) (Congdon) autumn quarter, Lab. MT 1:05-4:05, WF 9-12; winter quarter, Lab. MTWThF 9-12; spring quarter, Lab. MTWThF 1:05-4:05

6. Neurology.—A study of the structure of the central nervous system of man by means of dissections and prepared slides, supplemented by dissections of the central nervous system of other mammals. Text required: Villiger's Brain and Spinal Cord.

5 units, autumn and *winter quarters (Total, 55 units, or 99 hours)
(Stoltenberg) Lec. ThFS 8; Lab. ThF 1:05-4:05

Optional and Advanced Courses

7. Cytology.—The course deals with the structure and functions of the animal cell with special reference to the reproductive processes.

† Absent on leave, 1917-18.

Lectures, laboratory work, and assigned reading. Open to those who have had courses in Histology, Embryology, and Microscopic technique.

3 to 5 units, winter quarter (McFarland) MTWThF afternoons

8. Special Courses.—Advanced courses in Histology, Histogenesis, Microscopic Anatomy, Cytology, or Microscopic Technique will be planned to suit the needs of individual students. Open to those who have had courses in Histology and Embryology.

2 to 5 units, winter quarter (McFarland) MTWThF afternoons

9. Topographical Anatomy.—The work consists of laboratory study of frozen sections of foetal, infantile, and adult cadavers made in various planes, and of dissected and specially injected preparations, supplemented by models and atlases. It is suggested that students who can afford the time supplement courses 3, 4, and 5 by the respective portions of course 9 immediately on completing the dissection of a part. Open to students who have completed courses 2, 3, 4, and 5.

2 to 5 units, winter quarter (Congdon) By arrangement

10. Anatomy of the Sense Organs.—Dissections mainly. Texts: Quain-Schäfer's Microscopic Anatomy, Quain's Sense Organs. One lecture and five laboratory hours per week.

2 units, autumn and *winter quarters (Stoltenberg)
Lec. and Lab. MT 1:05-4:05

11. Morphogenesis.—Factors influencing animal form and structure are considered. Especial attention is given to man and mammals. Lectures and assigned reading.

2 units, winter quarter (Congdon) .. Lec. MW 8

12. Human Embryology.—This course will be offered as soon as adequate provision can be made. Course 12 in the Department of Zoology is a prerequisite.

13. Investigation and Special Work.—The facilities of the laboratory are always at the disposal of properly qualified students or physicians who desire to undertake the investigation of some problem in gross or microscopic anatomy or in embryology. Theses and special work must be arranged for individually, but may begin at any time.

Requirements for Advanced Degrees.—In addition to the requirements published in the University Register and the Announcement of the School of Medicine, students desiring to be admitted to candidacy for the degree of Master of Arts in Anatomy must have satisfactorily completed one year's work in histology and microscopic anatomy, at least one quarter of embryology, and possess a knowledge of laboratory technique adequate for the investigation to be undertaken. For admis-

sion to candidacy for the degree of Doctor of Philosophy a reading knowledge of both French and German is further required.

Deposit Fees.—A deposit of $2.50 for microscopes and of $10 to cover damages to or loss of bones, is required of all students. This sum, less charges for damage or loss, is refunded at the close of the academic year, except in the case of students discontinuing work. Such may obtain the refund at the end of the quarter. Students who are not registered in medicine are charged a fee of $15 for each of courses 3, 4, and 5, and $5 for each of the other courses.

Embryology.—Development of the chick through the first three days of incubation. (Course 12 in the Department of Zoology.)

5 units, winter quarter (Price) MTWThF afternoons

II. DIVISION OF BACTERIOLOGY AND EXPERIMENTAL PATHOLOGY

Wilfred Hamilton Manwaring, Professor.
†John Timon Connell, Herbert Lee Niebel, Instructors.

1. General Bacteriology.—Prerequisites: 150 units of University work, including Histology (Anatomy), Chemistry 17, *f*, and *l*.

4 units, spring and summer quarters (Total, 66 hours) (Connell, Niebel)
Lec. TTh 8; Lab. TTh 9-11

Vacation Class, September 17-October 3, 1917. (Niebel)
3 units. Lec. MTWThFS 8; Lab. MTWThF 9-4, S 9-12

2. Pathogenic Bacteriology.—Prerequisites: Physiology 3, 4, and Bacteriology 1.

6 units, autumn quarter (Total, 110 hours) (Manwaring, Niebel)
Lec. MTW 8; Lab. MTh 9-11, T 9-12

4. General Pathology (a).—Continuous with course 1 in the Division of Pathology, in San Francisco. The course covers: circulatory disturbances, degenerations, pigmentations, regenerations, and acute inflammation. Prerequisites: Anatomy, Embryology, and Bacteriology 2.

6 units, winter quarter (Total, 99 hours) (Manwaring, ———)
Lec. MWF 9; Lab. MWF 10-12

(For elective courses, see page 100.)

Fees.—Microscope rental, $2 per quarter. Vacation class, course 1, $10 (no extra fee for students now registered in medicine). Students pay for breakage and animals used.

† Absent on leave, 1917-18.

III. DIVISION OF CHEMISTRY

ROBERT ECKLES SWAIN, Professor.

§1. **Organic Chemistry.**—A lecture course embracing a study of the classification, structural formulae, and properties of the more important compounds of carbon. The chemical relationships of the larger groups of organic compounds, alcohols, aldehydes, and ketones, acids, amines, and the halogen, sulphur, and nitrogen compounds will be emphasized, special attention being given throughout the course to those compounds which are of physiological and pathological interest. (Course 10 in the Department of Chemistry.)

5 units, spring and *summer quarters (———) (spring) MTWThF 8; (summer) MTWThF 10

2. **Physiological Chemistry.**—Lectures on the chemical composition and action of the tissues and secretions of the animal body, the digestion of foods, and the elimination of waste products.

5 units, autumn and *summer quarters (Total, 55 hours) (SWAIN) MTWThF 8

3. **Physiological Chemistry.**—A laboratory course including a preliminary study of the proteins, carbohydrates, and fats, and the action of the various digestive fluids upon them, followed by a chemical examination of the bile, blood, milk, the chief tissues of the animal body, and the excretions. This course should be preceded by the equivalent of courses *d* and *f* (Qualitative and Quantitative Analysis) in the Department of Chemistry, and course 1 (Organic Chemistry).

4 units, autumn and *summer quarters (Total, 132 hours) (SWAIN) Five afternoons 1:05-4:05

4. **Toxicology.**—A laboratory course, accompanied by informal lectures, dealing with the more important poisons, their physiological action and the prominent reactions employed in their identification. A search for the common poisons, based on a systematic scheme of analysis, will be made on artificially prepared materials. Course *f* (Quantitative Analysis) or its equivalent is a prerequisite. (Optional.)

5 units, spring and *summer quarters (SWAIN) [Not given in 1917-18]

(Students enrolled as Medical students will be required to deposit $10 breakage fee for the laboratory course in Physiological Chemistry. Other University students will pay the usual fee of $25.)

§ Beginning with 1918-19 this course will be required for entrance to the Medical School.

IV. DIVISION OF HYGIENE AND PUBLIC HEALTH

†William Freeman Snow, Clinical Professor.
Richard Godfrey Brodrick, Wilfred Harvey Kellogg, Lecturers.

1. Hygiene.—This course is divided as follows:

(*a*) Required reading, covering the usual information essential to an understanding of the principles of public health and hygiene;

(*b*) Lectures on organized public health work, covering the administration of federal, state, and local health departments;

(*c*) Lectures on Medical Sociology, covering the activities of various types of welfare organizations.

The practicing physician's duties and opportunities in the field of preventive medicine are emphasized and illustrated by field trips to quarantine stations and health departments. (Three quarters required.)

1 hour, spring quarter (Total, 11 hours) junior year, T 1-2;
1 hour, autumn and winter quarters (Total, 22 hours) senior year.
(Brodrick, Kellogg) F 4-5

2. Public Health.—Research work for graduates, or for students registered as candidates for advanced degrees in the Medical Department, may be arranged in connection with investigations of the State Board of Health and the San Francisco Health Department.
(Brodrick, Kellogg)

V. DIVISION OF MEDICINE

[23]Albion Walter Hewlett (Executive), Professor.
William Fitch Cheney, Andrew William Hoisholt, †Langley Porter, Clinical Professors.
Thomas Addis, Associate Professor.
Harry Everett Alderson, Harold Phillips Hill, Walter Frank Schaller, Associate Clinical Professors.
Walter Whitney Boardman (Acting Executive, beginning winter quarter), Ernest Charles Dickson, Harold Kniest Faber, Henry Herbert Yerington, Assistant Professors.
‡Florence Mabel Holsclaw, †Harry Reeves Oliver, †Julian Mast Wolfsohn, Assistant Clinical Professors.
[23]George De Forest Barnett, Millicent Cosgrave, Instructors.

† Absent on leave, 1917-18; [23] absent on leave, beginning winter quarter.
‡ Resigned, December, 1917.

†William Redwood Price Clark, [23]Thomas George Inman, Henry George Mehrtens, Arthur Aloysius O'Neill, Alfred Cummings Reed, Chester Durbin Sewall, †Roland Beatty Tupper, Clinical Instructors.

William Louis Adams, Amelia L. Gates, Anthony Huffaker, †Charles Nelson Leach, Philip Hale Pierson, [23]Jay Marion Read, Assistants.

Arthur John Ritter, Lecturer on Mental Deficiency.

Robert Eugene Bering, Lecturer on Drug Addictions.

Subdivisions

PEDIATRICS	JURISPRUDENCE	ACTINOGRAPHY
NEUROLOGY	CUTANEOUS MEDICINE AND SYPHILIS	TROPICAL MEDICINE
PSYCHIATRY	ELECTROTHERAPY	DIETETICS
	TUBERCULOSIS	

Instruction in the Division of Medicine normally commences in the fifth quarter of medical registration, at which time the course in Physical Diagnosis is started at Stanford University. During the sixth quarter this course is finished in San Francisco, and a course in Clinical Pathology (Medicine 2) is also given. These courses are prerequisite for most other courses in this Division (except Medicine 5, 8, 9, 10, 11, 15, and 16) and on their completion the student is admitted to third-year standing in the Division of Medicine.

Students of third-year standing will be admitted to fourth-year standing (1) after having completed the following prescribed courses: Medicine 3, 4, 5, 6, 11, 13, 18, 19, 20, 23; (2) after having completed in addition: (*a*) at least 12 hours elected from the following courses: Medicine 7, 8, 9, 10, 12, 14, 15, 16, and 17; (*b*) and at least 2 hours elected from the following: Medicine 21 and 22; (3) after having passed final examinations in Internal Medicine and in Pediatrics as a whole, as well as in the preliminary course of Neurology.

Before graduation, students of fourth-year standing are required: (1) to complete the following prescribed courses: Medicine 25, 31, 32, 34, 35, 36; (2) to have completed in addition at least (*a*) 9 hours elected from the following courses: Medicine 17, 25, 26, 27, and 28; (*b*) 2 hours elected from the following courses: Medicine 29 and 30; (3) to have passed final examinations in Internal Medicine, Neurology, Diseases of Children, andCutaneous Medicine.

Deviations from the above general plan of work will be permitted

†Absent on leave 1917-18; [23]beginning winter quarter.

only after obtaining permission of the instructors involved and of the Head of the Division of Medicine.

Courses for Second-Year Medical Students

1. Physical Diagnosis.—An introductory course in Physical Diagnosis will be offered during the winter quarter at Stanford University, based mainly upon a study of normal subjects. A continuation of this course based mainly upon the study of those presenting physical abnormalities will be offered during the spring quarter in San Francisco. Students coming to San Francisco in the autumn quarter may take a combination of these courses at that time.

4 hours, winter and spring quarters (winter, at Stanford University, von Geldren); (spring, at San Francisco, Addis) (Total, 88 hours) T 9-11; S 10-12; or 7½ hours, autumn quarter (at San Francisco, Addis) (Total, 82 hours) TTh 9-11; M 9-10:30; S 10-12.

2. Clinical Pathology.—Lectures and laboratory work. The usual methods of examining the urine, blood, sputum, gastric contents, feces, and spinal fluid are carried out by the student and the significance of abnormalities studied.

4 hours, autumn and *spring quarters, at San Francisco (Total, 44 hours) (Barnett) F 8:30-10:30; S 8-10

Courses for Third-Year Medical Students

3. Diseases of the Thoracic Organs.—Clinics and recitations. Limited to 12 students.

4 hours, autumn, *winter, and *summer quarters. (Total, 44 hours) (Barnett, Dickson, or Hewlett) MTh 9-11

4. Diseases of the Digestive Tract.—Clinics and recitations. Limited to 12 students.

4 hours, autumn, *winter, and *summer quarters (Total, 44 hours) (Cheney, Boardman, or Sewall) MTh 9-11

5. Infectious Diseases.—Clinics and recitations.

3½ hours, spring quarter (Total, 38 hours) (Dickson) M 9-10:30, Th 9-11

6. Diseases of the Kidneys, the Blood, and of Metabolism. Clinics and recitations.

3 hours, autumn quarter (Total, 33 hours) (Addis) T 9-10, S 8-10

7. History Taking.—Practice in History Taking in the out-patient department with demonstration of patients. Course limited to groups of four students, but more than one group may be taken if hours can be arranged. (Elective.)

3 hours, any quarter (Total, 33 hours) (Dickson, Sewall, Reed) W 10-12, MTh 9-11, F 10-12, by arrangement

8. Tropical Diseases.—Clinics and recitations. (Elective.)

2 hours, spring quarter (Total, 22 hours) (Reed) M 11-12, S 9-10

9. Diseases of the Endocrine Glands.—Clinics and recitations. (Elective.)
1 hour, spring quarter (Total, 11 hours) (Wolfsohn) T 4-5

10. Experimental Medicine.—Discussions of selected topics dealing with the functional pathology of internal diseases. (Elective.)
3 hours, autumn quarter (Total, 33 hours) (Hewlett, Addis, Dickson, Boardman, Barnett) W 2-3:30, Th 4-5:30

11. Physical Therapeutics.—Lectures and demonstrations of various methods other than the use of drugs that are employed in the treatment of disease; including hydrotherapy, mechanotherapy, etc.
2 hours, spring quarter (Total, 22 hours) (Barnett) MT 2-3

12. Dietetics.—Lectures and recitations. (Elective.)
3 hours, spring quarter (Total, 33 hours) (Addis, Boardman) MTh 4-5, F 3-4

13. Practical Therapeutics and Prescription Writing.
3 hours, winter quarter (Total, 33 hours) (Hewlett) M 2-3, T 2-4

14. Roentgenography.—Practical instruction in plate interpretation. (Elective.)
2 hours, winter quarter (Total, 22 hours) (Boardman) T 1-2, Th 8-9

15. Serology.—Practical course in Serology and Immunology with particular study of the Wassermann test. (Elective.)
2 hours, spring quarter (Total, 22 hours) (Oliver) F 1-3

16. Clinical Bacteriology.—Practice in the examination of throat cultures, in the technique of isolation of organisms from the blood, stools, etc., and in the preparation of vaccines. (Elective.)
(Dickson) By arrangement

17. Set Clinic in Medicine.—Demonstration of patients from the ward and out-patient services of Lane Hospital. (Elective.)
1 hour, any quarter (Total, 11 hours) (Hewlett, Boardman) T 10-11

18. Pediatrics: Recitation.
2 hours each, autumn and winter quarters (Total, 44 hours) (Faber, Yerington) M 11-12, T 8-9

19. Infant Feeding, and Formula Preparation.—Practical course. Limited to eight students.
2 hours, any quarter (Total, 22 hours) (Yerington) F 10-12

20. Contagious Diseases (Isolation Hospital).—Limited to eight students.
2 hours, any quarter (Total, 22 hours) (O'Neill) W 8:30-10:30

21. Lectures on Pediatrics.—During the autumn quarter on Con-

tagious Diseases, during the winter quarter on Mental Deficiency, and during the spring quarter on selected topics. (Elective.)
1 hour, autumn, *winter, and *spring quarters (Total, 11 hours)
(O'Neill, Ritter, Porter, and others) Th 1-2

22. **Set Clinic in Pediatrics.**—Demonstration of patients from the Children's Ward and out-patient services of Lane Hospital. (Elective.)
1 hour, each quarter (Total, 11 hours)
(Porter, Faber, Yerington) T 11-12

23. **Neurology.**—Clinics, lectures and recitations; four units in all.
2 hours, winter and spring quarters (Total, 44 hours)
(Schaller) TF 9-10

Courses for Fourth-Year Medical Students

24. **Ward Work—Lane Hospital.**—Limited to eight students. (Elective.) Students electing this course are required to elect Medicine 17 also.
7 hours, any quarter (Total, 77 hours)
(Hewlett, Cheney, Boardman, Dickson) T 9-10, ThF 9-11, S 10-12

25. **Ward Work and Clinics—San Francisco Hospital.**—Limited to ten students. (One quarter is required; a second quarter may be elected.)
7 hours, autumn, *winter, and *spring quarters (Total, 77 hours)
(Hill) T 9-11:30, WTh 9-10:30, S 9-10:30

26. **Out-patient Work in Internal Medicine.**—Limited to two students. (Elective.)
4 to 6 hours, any quarter (Total, 44 to 66 hours)
(Dickson, Reed, Sewall) ThF 9-11, S 10-12

27. **Out-patient Work in Tuberculosis.** Limited to two students. (Elective.)
2 hours, any quarter (Total, 22 hours) (Clark) F 9-11

28. **Tuberculosis Clinic—San Francisco Hospital.**—(Elective.)
1 hour, autumn, *winter, and *spring quarters (Total, 11 hours)
(Clark) Th 10:30-11:30

29. **Neurology Clinic—San Francisco Hospital.**—(Elective.)
2 hours, autumn, winter, or spring quarter (Total, 22 hours)
(Wolfsohn) WS 10:30-11:30

30. **Out-patient Work in Neurology.**—Limited to two students. (Elective.)
6 hours, any quarter (Total, 66 hours)
(Schaller) Th 9-11, F 9-11, S 10-12

31. **Cutaneous Medicine.**—Lectures and clinics.
2 hours, autumn and *winter quarters (Total, 22 hours)
(Alderson) M 10:30-11:30, T 11-12

32. Out-patient and Ward Work in Pediatrics and Cutaneous Medicine.—Practical course. The student spends half the quarter in Pediatrics and the other half in Cutaneous Medicine. Limited to eight students.

6 hours, any quarter (Total, 66 hours)
(Alderson, Porter, Faber, Yerington) WThS 10-12

33. Roentgenography.—Practical course in fluoroscopy and in the technique of Roentgen Ray Examination. Limited to 2 students. (Elective.)

2 hours, autumn and *winter quarters (Total, 22 hours)
(Boardman) T 8-10

34. Psychiatry.—A weekly lecture preceded by a clinic. 4½ hours required in all.

1½ hours, autumn, winter, and spring quarters (Total, 50 hours)
(Hoisholt) M 1:30-3

35. History of Medicine.—In association with other Divisions a weekly lecture or recitation is held. The aim is to have each Division present that portion of the history of medicine in which it is most interested. The students are assigned a certain amount of journal and other preparatory work.

1 hour, winter quarter (Total, 11 hours)
(Ophüls, Stillman, Hewlett) T 3:30-4:30

36. Jurisprudence.—The instruction in this course will be divided among the various Divisions, each one covering the points most essential to it.

1 hour, autumn quarter (Total, 11 hours) (Dickson and others) M 4-5

VI. DIVISION OF OBSTETRICS AND GYNECOLOGY

Alfred Baker Spalding, Professor.
George Burbank Somers, Clinical Professor of Gynecology.
Henry Augustus Stephenson, Assistant Professor.
George Dunlap Lyman, †Shadworth Oldham Beasley, Henry Walter Gibbons, [23]Frank Robert Girard, Assistant Clinical Professors.
Ludwig Augustus Emge, Instructor.
†Joseph Richard Brown, Chester Biven Moore, Clinical Instructors.
Emmett James Brady, Assistant.

(Students before graduation must pass in at least 165 hours of Obstetrics and 100 hours of Gynecology, and must present certificates of attendance for at least 10 confinements.)

† Absent on leave, 1917-18; [23] absent on leave, beginning winter quarter.

Courses for Third-Year Medical Students

1. Laboratory Course.—The histology of the female genital tract together with a study of the histological changes induced by pregnancy in the uterus, tubes and ovaries, and a presentation of the histological changes caused by the more common obstetrical and gynecological diseases, are considered in this course. Students will be given paraffin sections ready for mounting, which they will be expected to mount and stain in advance.

4 hours, autumn and *summer quarters (Total, 44 hours) (Spalding, Stephenson) MF 1-3

2. Obstetrics.—Lectures and quizzes covering the subjects of normal and abnormal pregnancy.

2 hours, autumn quarter (Total, 22 hours) (Spalding) MF 8-9

3. Obstetrics.—Lectures and quizzes covering the subjects of normal and abnormal labor.

2 hours, winter and *summer quarters (Total, 22 hours) (Spalding) MF 8-9

4. Obstetrics.—Lectures and quizzes covering the subjects of the normal and abnormal puerperal period.

2 hours, spring quarter (Total, 22 hours) (Stephenson) MF 8-9

5. Ward Rounds.—Bedside instruction in the obstetrical wards. Class limited to 10 students.

1 hour, any quarter (Total, 11 hours) (Lyman, Moore) W 1-2

Courses for Fourth-Year Medical Students

6. Gynecology and Manikin Exercises.—The class is divided into two sections. One section is instructed in history taking and in the technique of cystoscopic, proctoscopic, and vaginal examinations, while the remaining section is being instructed in pelvic measurements, obstetrical diagnosis, and obstetrical operations on the manikin. Class limited to 16 students.

2 hours, winter, *spring, and *summer quarters (Total, 22 hours) (Beasley, Gibbons, Girard) WF 1-2

7. Out-patient Obstetrics.—For periods of two weeks the student lives in the Women's Clinic, assists in the prenatal clinic, attends confinements in Lane Hospital, delivers patients in their homes, and makes visits to the patients' homes during the puerperal period. Students are required to attend at least 10 confinements, and make at least 10 post-partum visits. Students on out-patient obstetrics should register for this course while doing clinical work at the Lane Hospital, and they

are excused from regular class work only while attending confinements. Courses begin on Monday at 8 a. m. throughout the year.

4 hours, any quarter (Total, 44 hours) (EMGE, MOORE) M 8

8. Ward Rounds.—Bedside instruction in the obstetrical wards. Class limited to 10. Prerequisites: courses 2, 3, and 4. (Optional.)

1 hour, any quarter (Total, 11 hours) (EMGE) M 1-2

9. Ward Rounds.—Bedside instruction in the gynecological ward. The symptomatology, etiology, and treatment of gynecological diseases are discussed, and the routine preparation of patients for operation and the post-operative care of patients are explained. Class limited to 10 students.

1 hour, any quarter (Total, 11 hours) (SPALDING or STEPHENSON) W 1-2

10. Women's Clinic.—For instruction in the taking of obstetrical histories, and in making ante-partum and post-partum examinations. Sections limited to 2 students. (Four times a week for three weeks.)

1 hour, any quarter (Total, 12 hours)
(STEPHENSON, MOORE) WThFS 11-12

11. Operating Room.—Operative clinics in gynecology are held throughout the year on Tuesday and Friday afternoons by Dr. Spalding and on Wednesday mornings by Dr. Stephenson. On Friday afternoons students are instructed in pelvic diagnosis and assist at times in operations. Each student must take a patient's history, write up the operation, note the post-operative condition, follow the patient until she returns to the clinic, review the literature for the past year on the condition treated, and hand in a report for distribution to the class. Limited to 10 students..

1 hour, any quarter (Total, 11 hours) (SPALDING) F 2-3

(Students may choose between the above and course 12. Only one of these courses required.)

12. San Francisco Hospital.—Operative clinics in gynecology are held on Tuesday mornings from August 1st to February 1st by Dr. Gibbons, and from February 1st to August 1st by Dr. Girard. On days on which there are no operations, students are instructed in the obsterical and gynecological wards. Clinical papers are required from students similar to course 11. Limited to 5 students.

1 hour, any quarter (Total, 11 hours) (GIBBONS, GIRARD) T 8-9

13. Conference Course in Gynecology.—Case histories, pathological specimens, and lantern slides are used in class discussions of gynecological ailments. The infectious and non-malignant tumors of the genital tract are covered in part in this course.

2 hours, autumn quarter (Total, 22 hours) (SPALDING) MW 3-4

14. Conference Course in Gynecology.—Case histories, pathological specimens, and lantern slides are used in class discussions of gynecological ailments. The lacerations of the genital tract, sterility, and the malignant tumors of the uterus and ovaries are discussed.

2 hours, winter and *summer quarters (Total, 22 hours)
(SPALDING) MW 3-4

15. Special Courses.—Work will be arranged in the laboratory or in the clinic to meet the needs of special workers.

(SPALDING and staff)

VII. DIVISION OF PATHOLOGY

WILLIAM OPHÜLS, Professor.
ELMER WILLIAM SMITH, Instructor.

(The following courses in Pathology are required of medical students: Pathology 1 (*b*), one quarter; Pathology 3, three quarters.)

1. General Pathology (b).—A course of lectures, demonstrations, and laboratory work which covers chronic inflammations, granulomata, and tumors. One lecture and two laboratory periods of two and one-half hours each, per week. Continuation of course offered by Department of Bacteriology and Experimental Pathology. Prerequisites: Histology, Bacteriology, Pathology 1 (*a*).

6 hours, autumn and *spring quarters (Total, 66 hours)
(OPHÜLS, SMITH) MW 1:30-4, T 8-9

2. General Pathology.—An elective course of weekly recitations covering the same ground as course 1.

1 hour, autumn and *spring quarters (Total, 11 hours)
(SMITH) By arrangement

3. Special Pathology.—A course of demonstrations of fresh and preserved gross and microscopical specimens, illustrating selected chapters on Human Pathology. Part of the work will be devoted to the technique of post-mortem examinations. Diagnostic work will be done in the spring quarter. Prerequisite: General Pathology (*a*) and (*b*).

4 hours, all four quarters (three quarters required). (Total, 44 hours per quarter; 132 hours required) (OPHÜLS, ———) Th 2-4, S 10-12

4. General Pathology (a).—A course covering the same ground as the course offered in the Department of Bacteriology and Experimental Pathology at Stanford University. Two laboratory periods of three hours each and two lecture hours. (Optional.)

8 hours, summer quarter (Total, 88 hours)
(OPHÜLS) MW 1:30-4:30, TTh 8-9

5. Research Work in the Pathological Laboratory.—Students wishing to do special work in the Pathological Laboratory should have fin-

ished course 1. They should consult with the Executive of the Division in regard to the selection of a proper subject for investigation. As the laboratory accommodations are limited, students must do a reasonable amount of work, otherwise the privilege will be withdrawn. A deposit of $10 will be required to cover such material as is used by the student in the course of his work. Such part of this as is not drawn against will be refunded on the completion of the work undertaken. Work may be undertaken during any of the four quarters. The same regulations apply to work on theses or for advanced degrees in the Division, except that in the latter case the student also should have finished course 3. (Optional.)

(Ophüls) By arrangement

VIII. DIVISION OF PHARMACOLOGY

Albert Cornelius Crawford, Professor.

1. Pharmacology and Materia Medica.—In this course emphasis is placed on the laboratory work which is a prerequisite to the more didactic part of the subject which is given to students with Junior standing. The laboratory work will be given in the autumn and spring quarters. (*a*) There will be two laboratory periods a week, of three hours each. In the same quarters there will be three hours of lecture and quiz work supplementing the laboratory work. (*b*) Students with Junior standing will be required to take a lecture and recitation course in Materia Medica and Pharmacology of five hours a week, which will be given in the winter quarter.

(*a*) 9 hours, autumn and *spring quarters (Total, 99 hours); (*b*) 5 hours, winter quarter (Total, 55 hours)

(Crawford) (*a*) TThF 1:30-4:30; (*b*) M 3-5, Th 4-5, F 1-3

2. Graduate Course.—The laboratory is open throughout the year to properly qualified students who wish to carry on independent work in Pharmacology. (Crawford)

3. Pharmacy.—A short optional course of demonstrations in pharmacy will be given. This will enable the student to understand better the advantages and dangers of combining drugs. (————)

IX. DIVISION OF PHYSIOLOGY

Oliver Peebles Jenkins, Professor Emeritus.

[1]Ernest Gale Martin, Professor.

James Rollin Slonaker, Frank Walter Weymouth, Assistant Professors.

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1 Absent on leave, autumn quarter.

(The numbers of the courses correspond to those under the Department of Physiology as outlined in the Register.)

3. Physiology of Muscle, Nerve, and the Central Nervous System.—An advanced study of the adaptive mechanisms of the body. Text-book: Howell's Physiology. Three lectures and six laboratory hours per week.

5 hours, winter quarter (Total, 99 hours) (MARTIN, SLONAKER)

4. Physiology of Circulation, Respiration, Digestion, and Metabolism.—An advanced study of the maintenance mechanisms of the body. Text-book: Howell's Physiology. Three lectures and six laboratory hours per week.

5 hours, winter quarter (Total, 99 hours) (MARTIN, SLONAKER)

5. Physiology of the Sense Organs.—An experimental study of these organs. Text-books: Herrick's Introduction to Neurology; Howell's Physiology. Three lectures and six laboratory hours per week.

5 hours, autumn and *winter quarters (Total, 99 hours) (WEYMOUTH)

6. Journal Club.—A study of physiological literature, with oral and written reports. Recommended for Medical students. One hour weekly. (Optional.)

1 hour, each quarter (Department FACULTY)

7. Advanced and Research Courses in Physiology are open to those who are qualified to take them up.

X. DIVISION OF SURGERY

ADOLPH BARKAN, Professor Emeritus.

[23]STANLEY STILLMAN (Executive), EMMET RIXFORD, Professors.

RUFUS LEE RIGDON, ALBERT BROWN MCKEE, EDWARD CECIL SEWALL, Clinical Professors.

†LEONARD WHEELER ELY, JOHN FRANCIS COWAN (Acting Executive beginning winter quarter), Associate Professors.

FRANK ELLSWORTH BLAISDELL, Assistant Professor.

LEO ELOESSER, [23]PHILIP KINGSNORTH GILMAN, HARRINGTON BIDWELL GRAHAM, HARVARD YOUNG MCNAUGHT, †GEORGE ROTHGANGER, Assistant Clinical Professors.

JOHANN ADOLPH BACHER, HANS BARKAN, JAMES ROOT DILLON, JAMES EAVES, †HARRY LESLIE LANGNECKER, CAROLINE B. PALMER, [23]CHESTER HOWARD WOOLSEY, Clinical Instructors.

HOWARD FELIX ADLER, JOHN ROBERT BURROWS, ROSS WALLACE HARBAUGH, LESTER O. KIMBERLIN, JOSIAH H. KIRK, GEORGE SCOTT WRINKLE, Assistants.

† Absent on leave, 1917-18; [23] absent on leave beginning winter quarter.

Subdivisions

OPHTHALMOLOGY GENITO-URINARY DISEASES ORTHOPEDICS
OTOLOGY, RHINOLOGY, AND LARYNGOLOGY

General Plan of Instruction

Instruction in the Division of Surgery commences in the sixth quarter in the Medical School in San Francisco.

The course in Principles of Surgery (Surgery 1) is a prerequisite to all of the courses in this Division. Courses 2, 3, and 4 are also given in the autumn quarter, and all four of these courses are repeated in the spring quarter. On completion of these courses, and after satisfactory examination, students will be admitted to third-year standing.

Students will be admitted to fourth-year standing after having completed courses 5, 6, 7, 8, 9, 10, 11, 12, 13, and having passed satisfactory examinations in the same.

Before graduation, students of fourth-year standing are required: (1) to complete the following prescribed courses: 14, 15, 19, 20, 21, 22; (2) to have completed, in addition, at least three hours elected from any two of the following courses: 16, 17, 18; (3) to have passed satisfactory examinations in the same.

Courses for Second-Year Medical Students

1. Principles of Surgery.—Recitations, demonstrations, and laboratory work, utilizing clinical and pathological material from the out-patient clinics and Lane Hospital, and preparations from the museum and laboratory of Surgical Pathology.

4½ hours, autumn and *spring quarters (Total, 50 hours)
(Cowan or Gilman) MWF 10:30-12

2. Fractures and Dislocations.—Recitations, study of X-ray plates, and demonstrations of fractures and dislocations. All the important fractures and dislocations are produced on the cadaver and subsequently demonstrated by dissection.

2 hours, autumn and *spring quarters (Total, 22 hours)
(Blaisdell) W 8:30-10:30

3. Surgical Anatomy.—In this course anatomy is reviewed from the standpoint of the surgeon, with special reference to the relation of important structures to each other and to the surface markings of the body. Twice a week for eight weeks.

1½ hours, autumn and *spring quarters (Total, 16 hours)
(Blaisdell) MW 4-5

4. Surgical Diseases of Extremities.

2 hours, autumn and *spring quarters (Total, 22 hours)
(Eloesser or Cowan) TTh 11-12

Courses for Third-Year Medical Students

5. Surgical Diseases of the Abdomen.
2 hours, autumn or spring quarter (Total, 22 hours)
(Stillman or Gilman) MF 4-5

6. Surgical Diseases of Head and Neck.
2 hours, winter quarter (Total, 22 hours) (Rixford) TF 4-5

7. Surgical Diseases of Thorax.
1 hour, spring quarter (Total, 11 hours) (Cowan) F 4-5

8. Surgical Clinic—Set Clinic, Lane Hospital (Two quarters required). *Anaesthetics:* In connection with the clinical work, students are assigned in rotation, so that each one shall administer 10 anaesthetics under the supervision of Dr. Caroline Palmer or Dr. John Burrows, Anaesthetists to Lane Hospital. Dr. Palmer also gives a course of three lectures on the administration of anaesthetics.
3 hours, winter and spring quarters (Stillman); or summer and autumn quarters (Cowan or Gilman) (Total, 66 hours) TTh 11-12:30

9. Out-patient Clinic (Two quarters required).
2 hours, autumn, winter, and spring quarters (Stillman or Rothganger); summer quarter (Cowan or Gilman) (Total, 44 hours) TW 10-11

10. Surgical Ward, Lane Hospital (Two quarters required).
1 hour, autumn and winter quarters (Cowan); or spring and summer quarters (Gilman) (Total, 22 hours) Th 8-9

11. Surgical Laboratory—Tumors.
3 hours, autumn and *summer quarters (Total, 33 hours)
(Cowan or Gilman) T 2-5

12. Surgical Laboratory—General Surgical Pathology (Two quarters required).
3 hours, autumn and winter quarters (Cowan and Ely); or spring and summer quarters (Gilman and Ely) (Total, 66 hours) W 2-5

13. Preliminary Ophthalmology.—Lectures on the relation of eye symptoms to general medicine and practice in the use of the ophthalmoscope.
1 hour, spring and *autumn quarters (Total, 11 hours)
(McKee or Barkan) M 3-4

Courses for Fourth-Year Medical Students

14. Surgical Clinic, Lane Hospital.—Class limited to 12.
3 hours, autumn and *winter quarters (Stillman); spring and *summer quarters (Cowan or Gilman) T 11-12:30, S 8:30-10

15. Surgical Clinic, San Francisco Hospital.
4 hours, autumn and winter quarters (Rixford); spring and summer quarters (Rixford or Eloesser)

(Three quarters selected from courses 14 and 15 required. Two quarters may be taken at the Lane Hospital and one at the San Francisco Hospital, or vice versa, as the student may elect. Total, 110 to 121 hours.)

16. Out-patient Clinics.—Class limited to twelve. (Elective.)
1 hour, any quarter (Total, 11 hours)
(STILLMAN or ROTHGANGER) W 9-10

17. Wards of Lane Hospital.—Class limited to 12. (Elective.)
1 hour, any quarter (Total, 11 hours) (COWAN or GILMAN) W 9-10

18. Operative Surgery on the Cadaver.—Class limited to 8. (Elective.)
2 hours a week for 6 weeks, winter and *summer quarters (Total, 12 hours)
(EAVES) Th 3:30-5:30

19. Orthopedic Surgery.—Class limited to 12. Clinics and demonstrations.
3 hours, any quarter (Total, 33 hours) (ELY, LANGNECKER) MF 10:30-12

20. Genito-Urinary Surgery.—Class limited to 12. Recitations and clinics. (Three quarters required.)
2 hours for 9 weeks, autumn, winter, and spring quarters, Lane Hospital (RIGDON); autumn, winter, and spring quarters, San Francisco Hospital (———) W 10-12

(One quarter each is required at Lane Hospital and the San Francisco Hospital. Third quarter may be at either hospital the student may select. Total, 54 hours.)
2 hours, summer quarter, clinics only. Lane Hospital (WOOLSEY, DILLON)

(A course limited to two students will be given in the out-patient clinic 6 hours a week for 8 weeks in the summer quarter.)
(WOOLSEY, DILLON)

21. Ophthalmology.—Lectures and clinics. (Three quarters required.)
2 hours for 9 weeks, autumn, winter, and spring quarters (Total, 54 hours);
2 units, summer quarter, clinics only (MCKEE, BARKAN) T 1:30-3:30

22. Otology, Rhinology, and Laryngology.—Lectures and recitations. (Three quarters required.)
1 hour, autumn, winter, and spring quarters (Total, 33 hours)
(SEWALL) Th 1:30-2:30

(In addition 33 hours of clinic work in sections not to exceed twelve.)
Any quarter (MCNAUGHT, BACHER, KIRK) Th 2:30-3:30

(A course limited to two students will be given in the out-patient clinic 6 hours a week for 11 weeks in the summer quarter.) (MCNAUGHT, BACHER, KIRK)

(A clinical course will be given at the San Francisco Hospital.)
3 hours, spring quarter (GRAHAM).

Either of these courses may be substituted for the above 33 hours of clinic work.

23. **Special Courses.**—(*a*) Through the coöperation of the various clinics and laboratories, opportunity is offered advanced students and physicians to make a special study of functional testing of the ear, tubercular lesions of the larynx, anatomy of the ear, nose, and throat, special bacteriology of the upper respiratory tract, Roentgen Ray diagnostic methods, and of performing operations upon the cadaver.

(Sewall, McNaught, Bacher, Kirk, Blaisdell, Dickson, Boardman)

(*b*) Special courses will also be offered to well-trained physicians in the laboratory of Surgical Pathology and in the out-patient clinic and hospitals. Such students may register for advanced degrees or as special workers.

(Stillman, Rixford, Blaisdell, Ely, Cowan)

MEMORIAL CHURCH

The Rev. David Charles Gardner, Chaplain.
Louis H. Eaton, Organist.

Morning prayers daily at 7:50 a.m., followed by a short address (autumn quarter). In this service students take part. Vesper service daily at 4:15 p.m. (winter quarter). Divine service is held on Sunday morning at 11 o'clock. Daily organ recital at 4:15 p.m.

SPECIAL PREACHERS, 1917-18

October 14. The Rev. Edward Lambe Parsons, Berkeley.
October 28. The Rev. Albert W. Palmer, Honolulu.
November 18, 25. The Rt. Rev. Nathaniel Seymour Thomas, D. D., Bishop of Wyoming.
December 9. The Rev. Caleb S. S. Dutton, San Francisco.
January 13. The Rev. Carl Safford Patton, D. D., Los Angeles.
January 27. The Rev. John Hardgrove Boyd, D. D., Portland, Ore.
February 10. The Rev. M. G. Papazian, Fresno.
February 24. The Rev. Byron H. Stauffer, San Francisco.
March 3. The Rev. A. J. McCartney, Chicago, Ill.

UNIVERSITY CHOIR

Louis H. Eaton, Organist and Director.

The choir sings at the morning service each Sunday in Memorial Church, the music consisting of anthem, chant, and hymns.

1 unit per quarter — Rehearsal Th 7:35

During the winter quarter a larger separate choir is formed for the performance of one of the great oratorios.

1 unit, winter quarter — Rehearsals as arranged

MILITARY TRAINING

†Jens Bugge, Major, U. S. Army, Retired, Professor.
Walter Schuyler Volkmar, Captain, U. S. Army, retired, Professor (beginning winter quarter).
[23]Henry Wilfred Maloney, Instructor.
August Bartels, First Sergeant, U. S. A., Retired.

Military training or physical training is required of all undergraduates during the first two years of residence, and the satisfactory completion of the work is prerequisite to graduation. After a student has registered for one or the other of the courses he must complete the year in that course, if he continues at the University. After having completed two years of training a student may be recommended for further training in the advanced course, which will require five hours per week and for which the student will receive two units per quarter for a satisfactory completion of the work. Any student taking the advanced course may secure an allowance from the government of about nine dollars per month, provided he agrees in writing to attend the summer camp which takes place after the school year is over.

Arms and Equipment.—Will be furnished by the government except such small articles as insignia of rank and collar and cap ornaments. Students will be held responsible for the proper care of the property issued to them, but only when it is injured or destroyed through the fault of the student will he be required to pay for it.

Instruction

1. First- and Second-Year Men.—Physical drill, Butt's Manual, and Koehler's physical drill; infantry drill, including the school of the

† Absent on leave after autumn quarter; 23 after February, 1918.

battalion; bayonet combat; field engineering: intrenchment on the sand table and also on the ground; map reading, by use of sand table and maps; target practice: preliminary drills in aiming, sighting and position, fire direction and control, gallery practice and range practice; first aid, personal hygiene, and camp sanitation lectures; security: talks on patrolling, outposts, advance and rear guards, with practical illustrations; combat, including the handling of a battalion in attack and defense, with practical illustrations; special talks: military policy of the United States, organization, supply, artillery and machine guns, cavalry and aeroplanes. (Three hours per week.)

Each quarter (Volkmar, Maloney, Bartels, Blackburn, Torbohn)
(I) MWF 11:15-12:15; (II) TThF 4:15-5:15

2. Advanced Course.—Military Art—Practical duties of officers and non-commissioned officers in connection with the work laid down for the first- and second-year men; military sketching. Theoretical—Minor tactics; field orders; company administration; property accountability.

2 units, each quarter (Volkmar, Maloney, Bartels, Blackburn, Torbohn)
M 4:15-6:15, TThF 4:15-5:15

Military Band.—The requirements laid down by the War Department are that the members of the band must take the regular course in Military Training. This means that the members of the Military Band will be required to master the individual instruction in regard to drill and to take all the lectures in the course. After the individual instruction is completed the band will be allowed to practice their music during the drill hour.

PHYSICAL TRAINING AND ATHLETICS

MEN

†Herbert Rowell Stolz, Assistant Professor of Physical Training and Personal Hygiene.

Ernesto Ray Knollin, Acting Director of Physical Training.

[23]Harry Wilfred Maloney, Instructor in Soccer Football, Boxing, and Fencing.

Ernst Brandsten, Instructor in Swimming.

Russell T. Wilson, Instructor in Baseball and Basketball.

It is the aim of the Department of Physical Training and Athletics to afford the opportunity for pleasurable and beneficial exercise for the

†Absent on leave, 1917-18; [23]after February, 1918.

men of the University. All undergraduates are required to devote three schedule hours per week for the first six quarters either to physical or military training. In physical training students must register in regular classes, and satisfactory attention as well as attendance will be required. Students entering with advanced standing may offer equivalent training in other colleges or universities in whole or partial fulfillment of this requirement.

Enrollment.—Enrollment in physical training classes takes place from 9:00 a.m. till noon and from 2 p.m. till 6:00 p.m. on the two succeeding days following registration day in each quarter. The physical training is arranged in a system of groups, each group containing one or more forms of exercise. For those who are fulfilling the physical training requirement enrollment must be completed and a group finally selected within one week from the first day of each quarter. Any one of the following groups may be selected:

Group	Days	Time	Exercise
1	MWF	10 to 11	Track, swimming, apparatus.
2	TThS	or	Basketball, swimming, tumbling.
3	MWF	11 to 12	Boxing, swimming, soccer.
4	MWF	2 to 3	Elementary swimming, soccer, tumbling.
5	TThS	2 to 3	Elementary swimming, soccer, apparatus.
6	MWF	4 to 5	Rugby Football, swimming, boxing.
7	MTTh	4 to 5	Track, soccer, apparatus.
8	MWF	4 to 5	Baseball, tumbling, boxing.
9	MTTh	4 to 5	Basketball, swimming, apparatus.
10	MWF	4 to 5	Soccer, swimming, apparatus.
11	MTTh	4 to 5	Swimming, water polo, tumbling.
12	MWF	5 to 6	Wrestling, track, basketball.
13	MTTh	5 to 6	Apparatus, soccer, tumbling.
14	MWF	5 to 6	Boxing, track, basketball.
15	MTTh	5 to 6	Fencing, apparatus, soccer.
16	To be arranged		Corrective exercises.
17	To be arranged		Teachers' training course.

In each of these groups emphasis is placed upon the sport first mentioned, in which expert instruction is given.

Hygiene and Public Health

1. Personal Hygiene and First Aid.—Two lectures each week during the first and second quarters. Open to all men of the University.

2 units (Stolz) [Not given in 1917-18.]

2. Public Health.—The present status of health in the United States; methods of health control. One lecture each week during the third quarter.

1 unit (WILBUR, STOLZ)

PHYSICAL TRAINING COURSE FOR TEACHERS

For those who intend to teach physical training and athletics a graded course extending over three years is offered. This course is given in coöperation with the Department of Education, and for a certificate in physical training the following requirements must be fulfilled.

COURSES IN THE DEPARTMENT OF EDUCATION

1 Public Education in America (3 units); 2 Educational Theory (3); 16 Hygiene of the School Child (2); 20 Principles of Secondary Education (3); 27 Methods and Management of Instruction (2); 28 Practice Teaching (6). Total, 23 units.

COURSES IN BIOLOGY

Physiology 1 or Zoology 1 (5 units).

COURSES IN HYGIENE AND PUBLIC HEALTH

1 Personal Hygiene and First Aid (4 units); 2 Public Health (1). Total, 5 units.

COURSES IN PHYSICAL TRAINING AND ATHLETICS

1. Gymnastic Nomenclature of Calisthenics.—Description and demonstrations of positions and movements of the body in relation to calisthenic exercises. Instruction in the theory of commanding and practice in leading. One lecture and three exercise periods per week.

2 units, autumn, *winter, and *spring quarters (KNOLLIN)

2. Gymnastic Nomenclature of Apparatus and Athletic Exercises.—Descriptions and demonstrations of positions and movements of the body with respect to apparatus and athletic exercises. Prerequisite: course 1, one lecture and three exercise periods per week.

2 units, autumn, *winter, and *spring quarters (KNOLLIN)

3. Nomenclature of Gymnastic Marching and Athletic Dancing.—Primarily for use in organization and direction of classes on the floor. One lecture and three exercise periods per week.

2 units, autumn, *winter, and *spring quarters (KNOLLIN)

4. Theory and Practice in Coaching.—*a* Soccer football (autumn or winter); *b* Baseball (winter or spring); *c* Rugby football (autumn); *d* Swimming (autumn, or winter, or spring); *e* Track athletics (winter or spring); *f* Basketball (winter); *g* Boxing and Wrestling

(autumn, or winter, or spring). One lecture period and three exercise periods each.

2 units each.

PHYSICAL TRAINING AND PERSONAL HYGIENE

WOMEN

†Clelia Duel Mosher, Assistant Professor and Director.
Muriel Vail, Mary W. Blanchard, Instructors.
Frances Odenheimer Park, Teacher of Fencing.
Greta Johannsen Brandsten, Life Saver and Instructor in Swimming.
Maude Flint, Lucile Vincénz, Gymnasium Assistants.

Beginning with the academic year 1917-18 physical training will be required of all undergraduate women during their first two years in the University.

The aim of Roble Gymnasium, as a laboratory of personal hygiene, is to improve the standard of physical health of the women and to increase their mental and physical efficiency; to encourage the habit of exercise; and to stimulate a widespread interest in physical activity of all kinds, especially in those forms which will be available to the women after leaving college. This will be accomplished by conducting organized classes, with instruction for individuals as well as for the various teams.

Dress: black bloomers with white middy blouse and rubber-soled regulation gymnasium shoes are needed for classes in the gymnasium and athletic fields. Ballet slippers are needed for all dancing classes.

1. Physical Training and Personal Hygiene.

Autumn, winter, and spring quarters:

Elementary Gymnastics	MWF 11, TThF 5
Elementary Dancing	TThS 11, MWF 5
Gymnastics	MWF 10
Intermediate Dancing	TThS 10, TThF 4
Tennis	MWF 10, TTh 10, MWS 11, TThF 11, MW, 4-5
Elementary Fencing	MWF 4
Advanced Fencing	TThF 10
Hockey (1st Term)	MTWTh 4-5

† Absent on leave after autumn quarter.

Basketball (2d Term).....MTWTh 4-6
Baseball .....MTWTh 4-5
Volley Ball and field sports (3d Term).

Autumn, winter, spring, and summer quarters:
Elementary Swimming.....MWF 10, MWF 3:05
Intermediate Swimming.....MWF 9, MWF 3:35
Advanced Swimming .....MWF 4

2. Personal Hygiene.—Four hours per week. Open to all women students. Required of all women taking courses 3 and 4.
2 units, spring and *summer quarters (Mosher) [Not given in 1917-18.]

3. Physical Training Theory and Practice Teaching.—Open only to students who have had Elementary and Advanced Gymnastics, Personal Hygiene 2, Zoology 10, or Anatomy.
2 units, winter and spring quarters [Not given in 1917-18.]

4. The Theory and Teaching of Athletic Plays and Games with Supervision of Children's Play.—Open only to students who have had one or more years of Physical Training 1, and Personal Hygiene 2.
2 units, winter and spring quarters (Vail) [Not given in 1917-18.]

Women who purpose attending later a School of Physical Training as preparation for becoming directors of Physical Training or supervisors of playground work, should take the subjects listed below in addition to the courses offered in this department. Such students will find it advantageous to major in Zoology; if other majors are desired, students are requested to consult the Director.

Zoology.—1. Elementary. (5 units)
4. The Vertebrates (field work). (3 units)
8. Microscopical Anatomy. (3 units)
12. Embryology. (3 units)

Anatomy.—2 Osteology.
2, 3, 4. Dissections of (2) Head, Neck, Thorax, (3) the Upper Extremity, (4) Lower Extremity and Abdomen. (2 to 5 units or more.)
9. Topographical Anatomy.

Physiology.—3. Muscle, Nerve, etc. (5 units, winter quarter)
3. Blood and Circulation, Respiration, Digestion, Excretion, and Metabolism. (5 units, spring quarter)

Psychology.—1. Elementary Psychology. (3 units, autumn and winter quarters)

Entomology.—1. Elementary. (5 units, winter and * summer quarters)

English.—Vocal Expression. (4 units, any quarter)

PHYSICS

FERNANDO SANFORD, Professor.
FREDERICK JOHN ROGERS, Associate Professor.
ELMER REGINALD DREW, JOSEPH GRANT BROWN, PERLEY ANSON ROSS, Assistant Professors.
EVALINE HAYDOCK, JOHN HIPP, JR., RAYMOND MORGAN, PEARL MAY WEEKS, Assistants in Instruction.

1. Mechanics and Properties of Matter.—Including Hydrostatics and Pneumatics. Open only to students who have had algebra and plane geometry. Two lectures and three laboratory periods per week for one quarter.

5 units, autumn and *spring quarters (ROSS) Lec. TTh 9; Lab. MTW 1:05-4:05

2. Heat.—Two lectures and three laboratory periods per week for one quarter. Prerequisite: course 1.

5 units, winter quarter (ROSS) Lec. TTh 9; Lab. MTW 1:05-4:05

3. Electricity.—Two lectures and three laboratory periods per week for one quarter. Prerequisite: course 1 or an equivalent.

5 units, spring quarter (DREW) Lec. TTh 9; Lab. MTW 1:05-4:05

4. Sound and Light.—Including wave motion. Five laboratory periods per week for one quarter. A part of the laboratory time will be given to lectures and the study of text-books. Prerequisite: course 1.

5 units, autumn quarter (BROWN) Lab. MTWThF 1:05-4:05

5. Advanced Physics.—Lectures. Prerequisites: courses 1, 2, 3, and 4, or their equivalent, or may be taken contemporaneously with course 4.

5 units, autumn, winter, and spring quarters (SANFORD) MTWThF 10

[Courses 1, 2, 3, 4, and 5 constitute a general course in Physics for major students and others who wish an equivalent training in Physics.]

6a. Mechanics and Heat.—Three lectures and one laboratory period per week. Prerequisite: entrance Physics.

4 units, winter quarter (BROWN) Lec. MWF 11; Lab. Th or F 1:05-4:05

6b. Wave-Motion and Light.—A continuation of course 6*a*.

4 units, spring quarter (BROWN) Lec. MWF 11; Lab. Th or F 1:05-4:05

6c. Electricity.—Prerequisites: 6*a* or 1 and 2.

4 units, autumn quarter (ROGERS) Lec. MWF 11; Lab. M or T or W 1:05-4:05

6d. Electricity and Electrical Measurements.—A continuation of 6*c*. Also open to students who have completed course 3.

4 units, winter quarter (ROGERS) Lec. TS 11; Lab. MT or ThF 1:05-4:05

[Courses 6*a*, 6*b*, 6*c*, and 6*d* are intended primarily for students of Engineering, but are open to others who have had equivalent preparation.]

7a. Mechanics and Heat.—Three lectures and two laboratory periods per week.

5 units, autumn quarter (Drew) Lec. MWF 9; Lab. MT 1:05-4:05 or TTh 8-11

7b. Electricity and Light.—Three lectures and two laboratory periods per week.

5 units, winter quarter (Drew) Lec. MWF 9; Lab. TTh 8-11 or MT 1:05-4:05

7c. Special Topics.—Lectures on topics in Wave Theory of Light, Electricity in Gases, Radioactivity.

3 units, spring quarter (Drew) MWF 9

[Courses 7*a*, 7*b*, and 7*c* are intended primarily for students preparing for the study of Medicine, but are open to others.]

8. Mechanical Measurements.—A course in exact measurements of mass, length, time, gravity, elasticity, surface tension, viscosity, etc., using balance, dividing engine, cathetometer, chronograph, etc. Three laboratory periods per week. Prerequisite: Physics 1. Given in alternate years with course 9.

3 units, spring quarter (Brown) Lab. MTW 1:05-4:05

9. Advanced Optics.—With especial reference to wave-length measurements and the study of spectra. Three laboratory periods per week. Prerequisite: Physics 4. Given in alternate years with course 8.

3 units, spring quarter (Sanford) [Not given in 1917-18.]

10. Analytic Mechanics.—Prerequisites: Course 1 and differential and integral calculus.

3 units, winter and spring quarters (Ross) By arrangement

11. Thermodynamics.—Including advanced topics in Heat. Prerequisites: courses 1 and 2 and calculus.

3 units, winter quarter (Drew) By arrangement

12. Kinetic Theory.—Prerequisites: courses 1 and 2 and calculus.

3 units, spring quarter (Drew) By arrangement

13. Photometry and Illumination.—Prerequisite: course 6. One lecture and one laboratory period per week.

2 units, winter quarter (Rogers) By arrangement

14a. Vibratory Motion.—Prerequisite: course 10.

3 units, autumn quarter (Rogers) By arrangement

14b. Wave Motion.—A continuation of 14*a*.

3 units, winter quarter (Rogers) By arrangement

15a. Electrical Theory.—Including Electrical Waves. Prerequisites: courses 6 and 10.
3 or 4 units, autumn quarter (Rogers) By arrangement

15b. Ions and Electrons.—A continuation of 15*a*.
3 or 4 units, winter quarter (Rogers) By arrangement

16. The Literature of Physics.—A reading course with weekly reports upon the literature of Physics, especially journal literature and the publications of learned societies. Open to students who have the preparation required for Physics 5.
2 units, any quarter (Sanford) WF 11

17. Teachers' Course in Elementary Physics.—Prerequisites: courses 1, 2, 3, and 4, or their equivalent.
3 units, autumn quarter (Brown) TThS 8

18. Investigation of Original Problems.
(Sanford) By arrangement

For Graduation in the department the minimum requirement is 60 units of Physics and Chemistry, of which at least 45 units must be Physics. All elementary courses except 6 and 7 are suitable for Physics majors.

The Teacher's Recommendation.—The minimum requirement is courses 1, 2, 3, 4, or an equivalent, and course 17.

Laboratory Fees.—Courses 1, 2, 3, 4, 6*d*, 8, 9, $4 each, per quarter; courses 6*a*, 6*b*, 6*c*, 13, $2 each, per quarter; courses 7*a*, 7*b*, $3 each, per quarter; course 18, $2 per unit, per quarter.

(For the summer quarter of 1918 Associate Professor Rogers will offer two courses on the regular schedule time of the other quarters in which they are given, viz.: 1, 6*a*, or 3, and 10, 14*a* or 15*a*.)

PHILOSOPHY

Henry Waldgrave Stuart, Professor.
Harold Chapman Brown, Associate Professor.

[Courses 1 and 7 only are open to first-year students; courses 1 to 5 inclusive presuppose no previous work in the department.]

1. Elementary Logic.—The principles of Deductive and Inductive Logic, with special attention to the important types of fallacy.
5 units, autumn and *summer quarters (autumn, Stuart; summer, Brown) MTWThF 8

2. Elementary Ethics.—A short survey of the morality of primitive peoples as compared with more developed forms of morality. The important historic theories as to the criterion for good conduct. The working principles of good conduct.

5 units, winter quarter (STUART) MTWThF 10

3. History of Philosophy.—The development of philosophical theories from the early Greek period to the end of the eighteenth century in Germany, with a brief outline of philosophical movements in the nineteenth century. Attention will be given throughout to the relations of philosophy with social and political conditions and with science, literature, and religion.

4 units, autumn and winter quarters (BROWN) MTThF 9

4. Modern Scientific Conceptions of Nature and Mind.—A study of current views of cosmic structure and the place of man and his activities in nature, in the light of recent developments in physical chemistry, evolutionary biology, and psychology.

4 units, autumn quarter (BROWN) MTThF 10

5. Esthetics.—The origins and nature of art. Its significance for religion, morality, and social life. The rise of art forms. Contemporary theories of esthetics.

5 units, spring quarter (BROWN) MTWThF 8

6. Philosophy of the Nineteenth Century.—The development of philosophical problems in France, Great Britain, and Germany will be studied in successive years in relation to the particular national genius and the conditions under which they arose. The topic for 1917-18 is British Philosophy since Hume. Prerequisite: course 3, or special permission of the instructor for suitably qualified third- or fourth-year students.

3 units, spring quarter (BROWN) TThF 9

7. Advanced Logic.—Methods of investigation in use in the natural and social sciences, and the cardinal assumptions and principles on which these methods are based. Prerequisite: course 1 or an equivalent.

4 units, winter quarter (STUART) TWThF 8

8. The Social Order and the Individual.—Insect and animal "societies" and the types of human social organization. Social authority and individual initiative. The political obligations of the individual and the ethical basis of political institutions and of law. Democracy

aristocracy, and absolutism. A continuation of course 2; open on approval to students otherwise qualified. Alternates with course 9.
4 units, spring quarter (STUART) [Not given in 1917-18.]

9. Religion.—The psychological and social origins of religion. The relations of religion to science, to morality, and to philosophy. The distinctive content and characteristics of the great religions. Prerequisite: course 2, 3, or 4, or an equivalent.
4 units, spring quarter (STUART) MTWF 10

10. The Problems of Contemporary Philosophy.—A survey of the main problems of General Philosophy as presented in the recent literature. Pluralism and Monism; Empiricism and Absolutism; Realism, Idealism, and Pragmatism. Open to third- and fourth-year students on approval.
4 units, spring quarter (STUART) MTWF 8

11. The Development of Philosophy in America.—A study of the form that European philosophies have taken in America and the beginnings of more characteristically American ways of thinking, such as Pragmatism and the New Realism.
4 units, summer quarter (BROWN) MTThF 9

12. Seminary.—*a*. Studies in the meaning and logical character of certain concepts in the social and natural sciences.
Autumn quarter (STUART) By arrangement

b. Studies in the History of Political Philosophy.
Winter quarter (BROWN) By arrangement

PHYSIOLOGY

†ERNEST GALE MARTIN, Professor.
JAMES ROLLIN SLONAKER, FRANK WALTER WEYMOUTH, Assistant Professors.

1. Elementary Physiology.—The structure and functions of the body with special reference to the mechanisms of external adaptation, namely, muscles, nerves, and sense organs. Designed, primarily, for students who are not looking forward to the study of Medicine. Intended to

† Absent on leave, autumn quarter, 1917-18.

impart a general conception of the relationship of the human body to its environment. Text-book: The Human Body, Martin, Advanced Course, Tenth Edition. Open to students who have at least ninety units of college credit, or forty-five units, including ten in Biology and ten in Chemistry.

5 units, autumn quarter (MARTIN, WEYMOUTH)
Lec. MWF 11; Lab. MT 1:05-4:05

2. Elementary Physiology.—The structure and functions of the body with special reference to maintenance, growth, and energy liberation. In this course, special attention will be paid to circulation, digestion, excretion, and metabolism. Although designed to offer in connection with course 1 a survey of the field of human physiology, this course is planned so that it may be taken independently of course 1. Text-book: The Human Body, Martin, Advanced Course, Tenth Edition. Requirements for admission the same as for course 1.

5 units, winter quarter (MARTIN, WEYMOUTH)
Lec. MWF 11; Lab. MT 1:05-4:05

S. General Physiology.—This course is designed to give a general survey of the physiology of living things with special reference to marine animals and the application of the fundamental principles thus developed to the functions of other forms including man. It is planned to accompany the elementary courses in Zoology and Botany given at the Hopkins Station, and to be so coördinated as to supplement the morphological conceptions developed in these courses with the basic principles of physiology, thus furnishing to those students taking this group of courses a comprehensive survey of Biology. For further details consult the announcement of the Hopkins Marine Station. Text-book: The Human Body, Martin, advanced course, tenth edition. For regularly enrolled undergraduates the requirements will be concurrent registration in General Zoology or previous training in this subject; elementary chemistry and botany are highly desirable. To those enrolled only in the summer quarter the course is open with no other restriction than evidence of ability to take it with profit.

5 units, summer quarter at Hopkins Marine Station (MARTIN, WEYMOUTH)
MTWThF 10-12

3. Physiology of Muscle, Nerve, and the Central Nervous System.—An advanced study of the adaptive mechanisms of the body. Required of majors in the Department. Prerequisites for majors: twenty units of Biology, including Histology; Physics 7, or its equivalent; Chemistry up to and including Physiological Chemistry (Physiological Chemistry may be taken concurrently with this course); for non-majors: twenty units of Biology, Elementary Chemistry, (Ele-

mentary Physics is recommended). Text-book: Howell's Physiology.
5 units, winter quarter (Martin, Slonaker)
Lec. MWF 8; Lab. MT 1:05-4:05

4. Physiology of Circulation, Respiration, Digestion, Excretion, and Metabolism.—An advanced study of the maintenance mechanisms of the body. Text-book: Howell's Physiology. Required of majors in the Department. Prerequisites as in course 3.
5 units, spring quarter (Martin, Slonaker) Lec. MWF 8; Lab. MW 9-12

5. Physiology of the Sense Organs.—An experimental study of these organs. Required of majors in the Department. Prerequisites as in course 3, with the addition of the anatomy of these sense organs (Anatomy 10); advanced students of other departments presenting less than these prerequisites may be admitted on recommendation of their major departments, but will be required to register for an extra unit of work, which will be devoted to a study of the anatomy of the sense organs. Text-books: Herrick's Introduction to Neurology; Howell's Physiology.
5 (or 6) units, autumn and *winter quarters (Weymouth)
Lec. TThS 9; Lab. (W)ThF 1:05-4:05

6. Journal Club.—A study of physiological literature, with oral and written reports. Required during two quarters of majors in the Department.
1 unit, autumn, winter, and spring quarters (Department Faculty)
By arrangement

7. Special Physiology.—An advanced course open to students who have had courses 3, 4, and 5. Designed to afford opportunity for the advanced study of selected subjects in Physiology. The work will be planned for the individual student.
1 to 5 units, any quarter (Martin) By arrangement

8. Research in Physiology.
(Martin, Slonaker, Weymouth) By arrangement

The Department of Physiology offers a major program designed to appeal to students combining with their interest in Biology a desire for training in Physics and Chemistry. The required work in the Department can be taken with advantage only by students who have a considerable foundation of Chemistry and Physics. Candidates for the Bachelor's degree who select Physiology as a major will be expected to take at least eighteen units of preliminary Biology. Zoology 1 and Histology, or their equivalents, will be required, and five units additional from one of the following departments: Zoology, Botany, Physiology, or Anatomy. In Chemistry, the courses preparatory to, and including Organic Chemistry are required as preliminary to the required work in

this Department. Course 7 in Physics, or its equivalent, is required, and also sufficient courses in German or French to give a reading knowledge of one or the other language. Major students in this Department are required to take courses 3, 4, 5, two units of course 6, and ten additional units from courses 7 and 8 (courses in Anatomy or Bacteriology may be substituted for these). Courses 17 and *l* in the Department of Chemistry (Physiological Chemistry) are to be taken before, or concurrently with, the required work in Physiology. Candidates for the degree of M. D., majoring in this Department, should take ten units of Zoology or Botany, and Histology, in fulfillment of the preliminary Biological requirement. The Department requirement for students looking forward to Medicine is designed to enable them to cover the required pre-medical subjects and the work of the first year in the Medical Department of this University, or to fit them to undertake to advantage the work of other first-class medical schools.

PSYCHOLOGY

Frank Angell, Professor.
John Edgar Coover, Assistant Professor, and Research Fellow in Psychic Phenomena.
Joseph Edgar De Camp, Instructor.
Gertrude May Trace, Assistant in Instruction.

1. General Psychology.—Lectures and exercises. Not open to first-year students except by permission. Titchener's Text-book of Psychology is used as a book of reference.

3 units, autumn and winter quarters (Angell) MWF 11

2. Experimental Psychology.—The experimental method in psychology. Sensation, perception, attention, affection, suggestion, and other complex mental processes will receive careful study through typical experiments. Prerequisite: credit for or enrollment in course 1. (One, two, or three quarters.)

3 units, autumn, winter, spring, and summer quarters (De Camp) (autumn, winter, spring) TTh 1:05-4:05; (summer) MW 1:05-4:05

3. Mental Hygiene.—Some of the practical considerations of psychology, their economic use in study and thought, and their application to everyday life. The utilization of psychological principles that make for mental efficiency and health. Especially adapted to freshmen. No prerequisite.

3 units, autumn and *summer quarters (De Camp) MWF 8

4. Experimental Psychology.—A course designed for prospective teachers. It deals especially with the learning processes, both simple and complex. Prerequisite: course 1, or equivalent.

3 units, autumn and winter quarters (Angell, Trace) MWF 1:05-4:05

4a. Experimental Psychology.—A continuation of course 4, but ranging over a wider field. Special studies arranged to meet the needs of individual students.

3 units, spring quarter (Trace) By arrangement

5. Abnormal Psychology.—A study of various abnormal mental conditions. A gradual development of the subject from the minor manifestations of the hypnagogic state through dreams, hypnotism, hysteria, multiple personality, etc., to the more widely divergent conditions appearing in some of the psychological forms of insanity. Prerequisite: course 1.

3 units, winter quarter (De Camp) MWF 8

6. History of Psychical Research.—A lecture course. A canvass of opinion on psychical phenomena is made from the daily press, from the popular magazines, and from professional literature; a detailed study of the more important investigations by psychical researchers is made; canons of evidence and of experimental method are adduced; and the present status of the various psychical phenomena is defined. The psychology of testimony, and the nature of scientific proof are considered in connection with the cases of research chosen for study. Assigned reading, class reports.

3 units, spring quarter (Coover) [Not given in 1917-18.]

7. Advanced Laboratory Work.

3 units, autumn, winter, and spring quarters (Angell)

7a. Space Perception.—Presupposes or accompanies courses 2 and 4, or their equivalent.

3 units, spring quarter (Angell) MWF 11

8. Statistical Methods.—A lecture and seminar course covering the theory of chance, and the application of statistical methods developed from the mathematical theory of probability to experimental psychology and psychical research. The student is expected to learn by problem-work to apply the methods intelligently, and to appreciate their soundness. Davenport, Yule, Brown, and Titchener are used for reference. Sound knowledge of algebra is a prerequisite.

3 units, winter quarter (Coover) TThS 9

9. Mind and Body.—A seminar course. The relation between mind and body are considered from both the philosophical and the psycho-

logical points of view. Results of medical and psychological investigation are used to demonstrate an interpretation of the nature of the mind which is free from atomistic or mechanistic implications. Prerequisite: course 1.

5 units, spring quarter (Coover) MTWThF 10

10. Advanced Psychology.—A discussion of some of the fundamental conceptions of psychology; the correlations which exist between the structure and function of the nervous system and the phenomena of human consciousness; important laws and theories in the field of sensation, attention, association, and affection. Lectures, readings, and discussions. Prerequisite: course 1.

3 units, summer quarter (De Camp) MWF 10

11. Current Psychology Literature.

1 unit, autumn, winter, and spring quarters (Angell) Th 2

12. Animal Psychology.—A study of the behavior of animal forms. The nature, purpose, and significance of comparative psychology; its relation to general psychology; its problems and outlook. The results of investigations relative to (1) sensory discrimination, (2) instinct, and (3) learning will receive careful consideration. The behavior of the earthworm, ant, and rat will be studied in the laboratory. Prerequisites: courses 1 and 2, or laboratory work in a biological science.

3 units, spring quarter (De Camp) By arrangement

13. Psychical Research.—A laboratory course offering opportunity to attack systematically any problem in the field for which our equipment is adequate.

Autumn, winter, and spring quarters (Coover) By arrangement

14. Research.

Autumn, winter, and spring quarters (Angell) By arrangement

ROMANIC LANGUAGES

Oliver Martin Johnston, Professor.

Clifford Gilmore Allen, Aurelio Macedonio Espinosa, Associate Professors.

Stanley Astredo Smith, Assistant Professor.

Louis Peter de Vries, Gabriel Henri Grojean, Instructors.

Lawrence Deane Bailiff, Eugene Jean Oberlé, Elizabeth D. Woodbridge, Assistants in Instruction.

The undergraduate courses in the Romanic Languages are planned so as to give students an intimate acquaintance with the modern forms of the languages spoken in the principal neo-latin countries. To this end systematic attention is paid to pronunciation, reading, syntax, and conversation. In the higher courses special emphasis is laid on the study of literature. In order to give students an opportunity to become familiar with the spoken idioms, the majority of the courses are conducted in the language which forms the object of study.

The Department offers advanced courses leading to the degree of Master of Arts and Doctor of Philosophy. The library contains adequate material for graduate courses in French and Spanish literature and philology. The Dante collection is also adequate for graduate work in this subject. The Department also accepts candidates for certification as high-school teachers of French and Spanish in California and provides courses to meet the special needs of such candidates. Either French or Spanish may be selected as a major subject. In addition to the elementary course, which does not count as a part of the requirement, majors in French or Spanish must complete the following courses for the degree of Bachelor of Arts:

(1) Second-year course (15 units);
(2) Advanced Composition and Conversation (9 units);
(3) Courses in literature or philology (30 units).

Of the 30 units required in literature or philology, the student may select 10 units outside of the major subject.

The Teacher's Recommendation.—The requirements for the teacher's recommendation are the same as for the Bachelor's degree with the exception of the fact that the 30 units under (3) must include the following courses:

A56 and A57 (or their equivalent), and A65 for majors in French.
B56 and B57 (or their equivalent), and B65 for majors in Spanish.

It is also recommended that course 106 in the Department of Germanic Languages be taken at the same time as A65 or B65. A reading knowledge of Latin and German is highly desirable. Recommendations will be given only on the vote of the Department and will demand a degree of scholarship above the ordinary passing mark.

Some of the courses scheduled for the Summer Quarter extend through only one term of the quarter. Others extend through both terms, but credit will be granted for work done in either term.

In 1917-18 and 1918-19 two sections of First-year French and two sections of First-year Spanish will be given as a part of the regular work of the Department Faculty, with no charge beyond a syllabus fee

of fifty cents per quarter. After October 1, 1919, First-year French and Spanish will be given by competent instructors under the supervision of the Department Faculty, and a fee of $7.50 per quarter will be charged. University credit will be given as at present.

I. Elementary and Intermediate Courses

A. French

A1. Elementary French.—Training in pronunciation by means of phonetic symbols, oral work, Ballard's Short Stories for Oral French. The elements of French grammar; the regular verb and the verbs *avoir* and *être*; Fraser and Squair, French Grammar, 20 lessons. Reading from Guerber, Contes et légendes, I.

5 units, autumn and *winter quarters (autumn, Oberlé) MTWThF 8, 9; (winter, Woodbridge) MTWThF 9

A2. Elementary French (continued).—Oral work continued. Study of the irregular verbs. Fraser and Squair, French Grammer, to end of Part I. Reading from Kuhns, French Reader for Beginners.

5 units, winter and *spring quarters (winter, De Vries, Oberlé) MTWThFS 8, 9; (spring, ———) MTWThF 9

A3. Elementary French (continued).—Thorough review of grammar. Oral work. Reading of the following texts: George Sand's François le Champi; Labiche and Martin, Le Voyage de M. Perrichon.

5 units, spring quarter (De Vries, Oberlé) MTWThF 8, 9

A21. Second-Year French.—Grammatical drill based on Larive et Fleury: Deuxième Année de Grammaire française. Composition from François, Introductory French Composition. Reading in class of Mérimée, Contes et Nouvelles; Victor Hugo, Ruy Blas. Outside reading of simple texts with written reports in French. Course conducted as far as possible in French.

5 units, autumn and *summer quarters (autumn, De Vries, Woodbridge) MTWThF 9, 10; (summer, Smith) MTWThF 9

A22. Second-Year French (continued).—Grammar and composition: same texts as in A21. Class reading: Vigny, La canne de jonc; Sardou, Les Femmes Fortes. Outside reading with written reports in French. Conducted as far as possible in French.

5 units, winter quarter (Smith, Grojean) MTWThF 9, 10

A23. Second-Year French (continued).—Grammar: same text as in A21 and A22. Composition: François, Alternate exercises in French Composition. Class reading: Dow and Skinner, Quelques Contes des

Romanciers Naturalistes; Augier, Le Fils de Giboyer. Outside reading with written reports in French. Conducted in French.

5 units, spring quarter (Smith, Grojean, Woodbridge) MTWThF 9, 10

A24. French Pronunciation.—Training in French pronunciation by means of practical phonetics. Matzke, Primer of Phonetics. Two meetings a week and one hour of practice with the phonograph. This course is of special interest to prospective teachers.

2 units, winter and *spring quarters (De Vries) MW 1:05

B. Spanish

B1. Elementary Spanish.—The elements of grammar, composition, and conversation. Reading and interpretation of Spanish texts. Texts for 1917-18: Espinosa and Allen, Spanish Grammar, lesson I-XX; Espinosa's Elementary Spanish Reader.

5 units, autumn quarter (Allen, Espinosa) MTWThF 9, 10

B2. Elementary Spanish (continued).—Texts for 1917-18: Espinosa and Allen, Spanish Grammar, lessons XXI-XXXVII; Fontaine, Flores de España; Alarcón, El Capitán Veneno.

5 units, winter quarter (Espinosa, Bailiff) MTWThF 9, 10

B3. Elementary Spanish (continued).—Texts for 1917-18: Espinosa and Allen, Spanish Grammar, lessons XXXVII-XLIX; Valera, El Pájaro Verde; Valdés, José.

5 units, spring quarter (Allen, De Setién) MTWThF 9, 10

B21. Second-Year Spanish.—Review of grammar, with abundant practice in conversation and composition. Reading aloud in Spanish, with careful drill in pronunciation. Reading and interpretation of Spanish texts, with a minimum of translation. Conversation in Spanish based on the texts read. Bi-monthly tests in translation and written reproduction of Spanish texts or short stories. Conducted mainly in Spanish.

Composition and conversation (MWF). Texts: Wilkins, Spanish Prose Book; Crawford, Spanish Composition; for grammar review and reference, Espinosa-Allen, Elementary Spanish Grammar.

Reading, pronunciation, and conversation (TTh). Texts: Benavente El Principe que todo lo aprendió en los Libros; Selgas, La Mariposa Blanca.

5 units, autumn and *summer quarters
(autumn, Espinosa, de Setién) MTWThF 8, 9; (summer, Espinosa)

B22. Second-Year Spanish (continued).—Composition and conversation (MWF). Texts: Espinosa, Spanish Composition and Conversa-

tion, Part I. For grammar review and reference, Espinosa-Allen, Elementary Spanish Grammar, or Olmsted-Gordon, Spanish Grammar. Original exercises in Spanish composition. Final examinations on all regular and irregular verbs and the use of the subjunctive.

Reading, pronunciation, and conversation (TTh). Texts: Martínez Sierra, Teatro de Ensueño; Valdés, La Hermana San Sulpicio.

5 units, winter quarter (Espinosa, de Setién) MTWThF 8, 9

B23. Second-Year Spanish (continued).—Composition and conversation (MWF). Oral drill in conversation and the mastery of a correct pronunciation. Short stories, and original compositions. Advanced Spanish grammar. Texts: Espinosa, Spanish Composition and Conversation, Part II, Burnet, Spanish Syntax.

Reading and interpretation of Spanish texts (TTh). Texts: Galdós, Doña Perfecta; Martínez Sierra, Canción de Cuna.

5 units, spring quarter (Espinosa, de Setién) MTWThF 8, 9

C. Italian

C1. Elementary Italian.—Grandgent's Italian Grammar. Goggio, Due Commedie Moderne.

5 units, autumn quarter (Grojean) MTWThF 9

C2. Elementary Italian.—Grandgent's Italian Grammar. Conversation. Wilkins and Altrocchi, Italian Short Stories; Goldoni, La Locandiera.

5 units, winter quarter (Smith) MTWThF 9

C3. Elementary Italian.—Review of Grammar. Composition and Conversation. Manzoni, I Promessi Sposi (edit. Geddes and Wilkins); Giacosa, Come le Foglie.

5 units, spring quarter (Smith) MTWThF 9

D. Portuguese

D1. Elementary Portuguese.—Branner, A. Brief Grammar of the Portuguese Language; Maria de Andrade, Terceiro Livro de Leitura.

5 units, autumn quarter (Smith) [Not given in 1917-18.]

D2. Elementary Portuguese (continued).—Branner, A Brief Grammar of the Portuguese Language. Conversation based on A. de Carvalle, O. Pequeno Portuguez. Reading from Almeida Garrett, Viagens na minha terra.

5 units, winter quarter (Smith) [Not given in 1917-18.]

II. Advanced and Graduate Courses

A. French

A51. Advanced French Composition and Conversation.—Vreeland and Koren, French Syntax and Composition. Larive et Fleury, Troisième Année de grammaire française will be used as a basis for grammatical drill. Outside reading and written reports in French.

3 units, autumn and *summer quarters (autumn, Grojean) MWF 11; (summer, Smith) MWF 10

A52. Advanced French Composition (continued).

4 units, winter quarter (Grojean) MWF 11

A53. Advanced French Composition (continued).

3 units, spring quarter (Grojean) MWF 11

A54. Cours de Style.—Ouvert aux seuls étudiants possédant une connaissance parfaite des principes essentiels de la Grammaire Française. Themes (A. Baret, La Troisième Année d'Anglais), Compositions françaises (narrations, descriptions, etc.).

Résumés de chefs-d'œuvre de la littérature française avec commentaire grammatical, en français.

4 units, spring quarter (Grojean) MTThF 10

A55. La France de 1789 à nos jours.—Etude de la Constitution de 1875. Les conférences seront faites en français. Lectures et comptes-rendus.

4 units, winter quarter (Grojean) [Not given in 1917-18.]

A56. Outline Course in the History of French Literature from the earliest times to the end of the seventeenth century.—Abry, Audic et Crouzet, Histoire illustrée de la littérature française, pp. 1-306. The text will be studied outside of class and periodical tests will be given upon it. Most of the work done in class will consist of the reading and interpretation of representative works of each period. Some outside reading will also be assigned.

3 units, winter quarter (Smith) MWF 11

A57. Outline Course in the History of French Literature from the end of the seventeenth century to the present time. Abry, Audic et Crouzet, Histoire illustrée de la littérature française, pp. 307-648. Conducted on the same plan as A56.

3 units, spring and *summer quarters (Smith) MWF 11

A58. French Literature in the Seventeenth Century.—Lectures in English on the formation of the classic ideal in France and on the main movements, authors, and works of the classic age. Outside reading and reports.

4 units (Smith) [Not given in 1917-18.]

A59. The Romantic Movement in France.—Its origins. Rousseau, Bernardin de Saint-Pierre, Mme. de Stäel, Chateaubriand. Foreign influences: Germany, England, and Italy. The Romantic Revolution with special reference to V. Hugo and the Romantic drama. Outside reading, reports. Course conducted in French.

4 units, autumn quarter (GROJEAN) MTThF 10

A60. The French Novel—Lectures in English. Emphasis will be placed on the study of the realistic-naturalistic movement of the 19th century. Extensive reading outside of class and discussion of representative works.

4 units, spring quarter (DE VRIES) MTWF 11

A61. The French Drama.—Lectures on the development of the French drama. Emphasis on the realistic-naturalistic tendencies of the 19th century. Extensive outside reading and discussion of plays of representative modern authors.

4 units, winter quarter (DE VRIES) MTWF 10

A62. Literary Criticism.—Lectures in English on the history of literary criticism in France from the Renaissance to modern times. Emphasis is laid on the 19th century.

3 units, autumn quarter (DE VRIES) MWF 11

A63 Renan, Taine, and Sainte-Beuve.—A study of French thought in the 19th century centering around the above authors. The more important works of Renan and Taine, and selections from Sainte-Beuve will be read by the class.

4 units, winter quarter (DE VRIES) [Not given in 1917-18.]

A64. French Lyric Poetry.—French lyric poetry from the beginnings to the present time, with emphasis on the 19th century. Outside reading and reports. Open to students who have completed A23.

2 units, 2d term, summer quarter (JOHNSTON) MTWTh 8

A65. Problems of Teaching French.—Practice in the use of the phonetic method as a means of teaching French pronunciation, review of French grammar, lectures on methods of teaching French, pedagogical bibliography, and suggestions regarding available text-books. Practice teaching.

3 units, autumn quarter; 2 units, 1st term, summer quarter (JOHNSTON) (autumn) MTTh 1:05; (summer) MTWTh 1:05

A66. Introduction to the Study of Old French.—Reading and interpretation of old French texts selected from Bartsch-Wiese, Chrestomathie de L'Ancien Français, with a study of Old French Phonology and Morphology.

2 units, autumn quarter (JOHNSTON) TF 2:05

A67. French Historical Grammar.—Lectures on Old French Phonology and Morphology.
3 units (JOHNSTON) [Not given in 1917-18.]

A68. French Historical Syntax.—The most important phases of modern French syntax will be studied from a historical point of view. This course is intended primarily for teachers.
2 units (JOHNSTON) [Not given in 1917-18.]

A69. Old French Literature.—French literature from the beginnings to the 15th century, with emphasis on the literary and social traits. Outside reading and reports.
4 units (JOHNSTON) [Not given in 1917-18.]

A70. French Arthurian Romances.—Lectures on the romances of the Round Table, the legend of the Holy Grail, and the legend of Tristan and Iseut. Outside reading and reports.
3 units, winter quarter (JOHNSTON) MTWF 2:05

A71. French Seminary.—Corneille.
3 units, autumn quarter (JOHNSTON) W 1:05-3:05

A72. French Seminary.—French Feudal Epic.
3 units, winter quarter (JOHNSTON) W 9-11

B. SPANISH

B51. Advanced Spanish Composition and Conversation, A.—Reading of Spanish texts with abundant oral practice and exercises in composition. Original compositions. Texts: Martínez Sierra, Treato de Ensueño; Benavente, Lo Cursi. Conducted entirely in Spanish.
3 units, autumn quarter (DE SETIÉN) MWF 10

B52. Advanced Spanish Composition and Conversation, B.—Original compositions. Translation into Spanish of selected English prose. Spanish syntax. Conducted entirely in Spanish.
3 units, winter and *summer quarters
(winter, DE SETIÉN; summer, ESPINOSA) MWF 10

B53. Advanced Spanish Composition and Conversation (continued).
3 units, spring quarter (ESPINOSA) MWF 10

B55. Historia de la Civilización Española.—Conferencias sobre la historia de España y la civilización de Española: interpretación de la cultura española y del espiritu español en España y en la América española. Historia, política nacional, arte, literatura, renacimiento intelectual.
3 units, spring quarter (DE SETIÉN) MWF 10

B56. Spanish Literature from the beginnings to the death of Cervantes.—Outline course.

3 units, spring quarter (ALLEN) MWF 9

B57. Spanish Literature from the Death of Cervantes to the Present Time.—Outline course.

3 units, summer quarter (ALLEN) MWF 8

B58. Spanish Classics.—A study of the principal authors of the classical period. Representative texts will be read of Cervantes, Lope de Vega, Calderón, Alarcón, Tirso de Molina, as well as selections from Ford's A Spanish Anthology. Open to students who have completed courses B21, B22, and B23 or their equivalents.

4 units, autumn quarter (ALLEN) MTThF 9

B60. Modern Spanish Novel.—A study of the modern Spanish novel and its relation to the development of the novel in France and other European countries. Lectures and collateral readings.

3 units, summer quarter (ALLEN) MWF 10

B61. Teatro Español Contemporáneo.—(*a*) Breve resumen de la historia del teatro español en el siglo XIX: Rivas, Gutiérrez, Zorilla, Bretón de los Herreros, Ayala, Echegaray. (*b*) Estudio de los dramáticos contemporáneos, con atención especial a Jacinto Benavente, Eduardo Marquina y Martínez Sierra.

3 or 5 units, winter and *summer quarters (ESPINOSA)
(winter) MWF 11; (summer) MTWThF 9

B64. Spanish Lyric Poetry.—A study of the various schools of lyric poets, as the Galacian, the Italian, the National, the mystic, Gongorism, the French, the romantic, etc.

3 units, spring quarter (ALLEN) MWF 10

B65. Problems of Teaching Spanish.—A consideration of the important question of Spanish pronunciation, grammar, reading, and literary interpretations, together with a discussion of the general questions of methods of teaching as applied to the teaching of elementary and advanced Spanish. Pedagogical bibliography and school texts. Practice teaching.

3 units, autumn quarter; 2 units, 1st term, summer quarter (ESPINOSA)
(autumn) MWF 11; (summer) MTWTh11

B66. Introduction to the Study of Old Spanish.—Reading and interpretation of old Spanish texts. Lectures on old Spanish Phonology and Morphology, with linguistic exercises based on El Cantar de mío Cid. Ford, Old Spanish Readings, Biblioteca de Autores Españoles, vol. LVII.

3 units (ESPINOSA) [Not given in 1917-18]

B67. Spanish Historical Grammar.—Lectures and study of Old Spanish texts. Hanssen, Grammática Histórica Castellana, Halle, 1913.
3 units (Espinosa) [Not given in 1917-18.]

B70. Origins of Spanish Drama.—A history of the drama from the earliest times to its full development with Lope de Vega. Lectures and collateral reading.
3 units (Allen) [Not given in 1917-18.]

B71. Spanish Seminary.—Old Spanish Ballads. Lectures and investigations on special topics.
3 units, spring quarter (Espinosa) T 10-12

B72. Spanish Seminary.—Lope de Vega. Topics assigned to each student.
3 units, autumn quarter (Allen) MWF 10

C. Italian

C51. Dante and the Divine Comedy.—Reading and interpretation of the Divine Comedy. Lectures on Dante, the Divine Comedy, and the principal problems of medieval life and thought reflected in the poem. Outside reading and reports. Open to juniors and seniors in all departments.
3 units, winter and *summer quarters (Johnston)
(winter) MWF 8; (summer) MTWTh 8

C52. Advanced Italian.—Dante, La Divina Commedia. Study and interpretation of the text; discussion of the literary problems of the poem.
3 units, autumn quarter (Johnston) [Not given in 1917-18.]

C53. Advanced Italian (continued).
3 units, winter quarter (Johnston) [Not given in 1917-18.]

C54. Advanced Italian (continued).
3 units, spring quarter (Johnston) [Not given in 1917-18.]

E. Provençal

E51. Introduction to the Study of Old Provençal.—Reading of selected passages from Appel's Provenzalische Chrestomathie, with a study of Old Provençal Phonology and Morphology.
3 units (Johnston) [Not given in 1917-18.]

F. General Courses

F51. Romance Versification.—The fundamental principles of Romance verse structure, with particular attention to French and Spanish. Lectures and practical exercises.
3 units (Espinosa) [Not given in 1917-18.]

F52. Phonetics.—[See course 131 in the Department of Germanic Languages.]

Journal Club

The instructors in the department and the advanced students meet on the first Thursday of each month for the discussion of the periodicals and new books.

Th 2-3

ZOOLOGY

Charles Henry Gilbert, Harold Heath, George Clinton Price, Professors.

John Otterbein Snyder, Associate Professor.

Edwin Chapin Starks, Walter Kenrick Fisher, Assistant Professors.

Willis Horton Rich, Teaching Assistant.

[Courses 1 and 4 may be undertaken without previous preparation in Zoology.]

1. General Zoology.—A laboratory course involving the study of representatives of the principal groups of animals, accompanied by lectures on their structure and classification, and on the general laws of biology which they illustrate.

5 units, autumn, *winter, *spring, and *summer quarters (summer quarter at Hopkins Marine Station, Pacific Grove) (Price, Starks, Rich) MTWThF 1:30-4

2. Systematic Study of the Invertebrates.—A survey of the entire field of invertebrate zoology from the systematic standpoint, with especial reference to the broader lines of classification. The course is designed to give a wide acquaintance with animal forms, their relationships, and distribution.

3 units, spring and *summer quarters (Hopkins Marine Station, Pacific Grove) (Fisher) Lec. by arrangement; Lab. MTW 1:30-4

3. Limnology.—A study of the behavior, structure, and environment of the simpler fresh-water organisms.

2 units, spring and *summer quarters (Hopkins Marine Station, Pacific Grove) (Fisher) Lab. ThF 1:30-4

4. The Vertebrates.—A general course in the classification of vertebrate animals, with studies in their habits and the geographical distribution of species. The course is largely devoted to birds. It includes field excursions, and observations of live animals in the laboratory.

5 units, spring quarter (Snyder) MTWThF 1:30-4

5. The Invertebrates.—This course, following course 1, is designed to give the student a broader knowledge of the morphology and relationships of the more important invertebrate groups.

5 units, autumn and *summer quarters (summer quarter at Hopkins Marine Station) (Heath) MTWThF 1:30-4

6. Invertebrate Embryology.—A study of segmentation, the formation of the germ layers, and certain phases of the later development, including the significance of larval forms and the relationships of the principal phyla. Must be preceded by courses 1 and 5.

3 units, winter and *summer quarters (summer quarter at Hopkins Marine Station) (HEATH) MTW 1:30-4

7. Advanced Work on Invertebrates.—The original investigation of problems connected with anatomy and embryology of invertebrates.

3 to 5 units, autumn, winter, and spring quarters (HEATH) 1:30-4

8. Microscopical Anatomy.—A study of the fundamental animal tissues, with drill in microscopical technique.

2 units, winter quarter (HEATH) ThF 1:30-4

9. Research Work on Invertebrates.—Prosecution of special studies with reference to the classification, anatomy, and life history of invertebrates.

Autumn, winter, spring, and summer quarters (at Hopkins Marine Station, Pacific Grove) (FISHER) By arrangement

10. Advanced Vertebrates.—Advanced studies in systematic vertebrate zoology, including practice in museum methods, in field observations, and in the collection and preparation of specimens with data. To be preceded by course 4.

3 to 5 units, autumn quarter (SNYDER) MTWThF 1:30

11. Comparative Anatomy of the Vertebrates.—A detailed examination of vertebrate morphology, including dissection of representatives of the several classes of vertebrates, with comparative studies in vertebrate osteology, the nervous and circulatory systems.

5 units, winter quarter (SNYDER) MTWThF 1:30-4

12. Vertebrate Embryology.—The development of the chick through the first three days of incubation, and the later stages in the development of the mammal.

5 units, winter and spring quarters (PRICE, RICH) MTWThF 1:30-4

13. History of Zoology.—A course of lectures dealing with the great discoveries in the science of zoology, together with the lives of some of the more prominent zoologists. Open to students who have had 15 units of biological work. Two lectures weekly.

1 unit, spring quarter (PRICE) Hours to be arranged

14. Primitive Chordates.—Amphioxus, the tunicates, and the lampreys.

5 units, autumn quarter (GILBERT) Forenoon hours, by arrangement

15. Fishes.—An examination of the larger groups of fishes and practical work in the discrimination of species.

5 units, spring quarter (GILBERT) Forenoon hours, by arrangement

16. Advanced Ichthyology.—Special problems in the morphology and classification of fishes will be set for advanced students prepared for such work.

2 to 5 units, autumn, winter, and spring quarters (GILBERT) By arrangement

17. Journal Club.—Open to seniors and graduate students.

2 units, autumn, winter, and spring quarters (GILBERT) By arrangement

Major students must before graduation complete courses 1, 2, 4, 5, 6, 8, 11, 12, 14, 15, and 17, one advanced course in Zoology, and course 1 in Botany. Substitution of other courses is permitted in special cases.

Work for graduate and special students will be laid out in accordance with their individual needs and preferences.

Students who look forward to the study of medicine may take Zoology for their major subject and receive the A. B. degree at the close of a four years' course which shall also contain the first year in medicine. The following courses in Zoology will be required of such students: Zoology 1, 5 units; Invertebrate Morphology, 5 units; Comparative Anatomy, 5 units; Vertebrate Embryology, 5 units; Journal Club, 6 units.

THE TEACHER'S RECOMMENDATION.—The Department recommendation for the High School Teacher's Certificate in Zoology requires the completion of the following courses: Zoology as a major: Zoology 1 (General), 5 units; 2 (Invertebrates), 5 units; 4 (Vertebrates), 5 units; 6 (Invertebrate Embryology), 3 units; 11 (Comparative Anatomy of Vertebrates), 5 units; 12 (Vertebrate Embryology), 5 units; Entomology 3 (Insect Ecology), 5 units. Total, 38 units.

Zoology as a minor: Zoology 1, 4, 5, 11; Entomology 3. Total, 25 units.

THE ZOOLOGICAL COLLECTIONS

The ZOOLOGICAL MUSEUM contains a very full representation of the fishes of North America, and includes among others a valuable series of the deep-water fishes of the Pacific, and large collections from the West Indies, the Hawaiian Islands, Bering Sea, Japan, the coasts of Mexico and Central America and the Galapagos Islands. The museum contains also a large representation of the reptiles, batrachians, birds, and mammals of California and adjoining States. The collection of marine invertebrates is rich in Pacific echinoderms and crustacea, and contains a good working nucleus in the other principal groups. The series of deep-sea forms is especially valuable.

LABORATORY FEES.—Courses 1, 4, 5, 11, and 12, $5 each quarter; other laboratory courses $3 each quarter.

LECTURES, RECITALS, LITERARY CONTESTS, HONORS, AND CLUBS

University Assemblies

UNIVERSITY Assemblies are held on alternate Thursdays at eleven o'clock. All University classes are suspended during the Assembly hour.

The following is the programme of meetings for 1917-18 (to March):

October 4.—Addresses of Welcome by President Ray Lyman Wilbur, Chaplain David Charles Gardner, Dean Harriet Bradford, and Student Adviser Wayne Leslie Miller.

October 11.—Medical Progress Since the Beginning of the War: Dr. Simon Flexner, Director of the Rockefeller Institute for Medical Research, New York City.

November 1.—Russia's Trial: Mr. Jerome B. Landfield, of Burlingame.

November 8.—War Work Campaign of the Y. M. C. A. and Y. W. C. A.: Mr. John E. Sprunger, California Secretary Y. M. C. A.; Mr. Chester Rowell, of Fresno.

November 15.—Civic Duty: Mr. F. J. Koster, President of the San Francisco Chamber of Commerce.

January 31.—My Flight From Louvain: Madame Leon Dupriez; The Stanford Ambulance Service in France: Mr. Harold C. Blote.

February 20.—Personal Experiences Among the Serbians in War Time: Mrs. St. Clair Stobart, of England.

March 6.—Why We Are at War, and the Importance of Victory: Professor William Bennett Munro, of Harvard University.

University Addresses, Etc.

The Faculty Committee on Public Exercises presents a series of addresses, recitals, concerts, or other form of entertainment, usually on Tuesday evenings. The following is the programme of meetings for 1917-18 (to March 19th):

October 9.—The United States Food Administration: President Ray Lyman Wilbur.

October 16.—The South American Tour (illustrated): Miss Annie Peck.

October 23.—Art for America: Mr. William Ordway Partridge, of New York City.

October 30.—The Relations Between the United States and Japan: Mr. Samuel S. McClure, of New York City.

November 6.—The Man Martin Luther and His Work: The Rev. David Henry Bauslin, D.D., Dean of the Divinity School, Wittenberg College, Springfield, Ohio.

November 13.—Concert by Signor Antonio de Grassi, Violinist, assisted by Madame Winifred June de Grassi, Mezzo-Soprano, and Mr. Frederick Maurer, Jr., Pianist.

November 20.—Some Impressions of an Undergraduate at Cambridge University: Bishop Nathaniel Seymour Thomas, of Wyoming.

November 27.—A Reading of Aristophanes' "The Clouds," by Professor Francis Greenleaf Allison, of Brown University.

December 4.—Chamber Concert, by the Savannah String Quartet, assisted by Mrs. Maurice Kramer, Pianist.

December 11.—The Earth's Place in the Universe: Director William Wallace Campbell, of the Lick Observatory.

December 18.—Concert by the Savannah Ensemble Club, assisted by Mr. L. H. Eaton.

January 8.—Some Modern Problems: The Rev. Joseph Gleason, of Palo Alto.

January 15.—The Dynastic System—the Tap Root of War: Chancellor David Starr Jordan.

January 22.—Song Recital by Miss Amy Holman.

January 29.—The Glory that was Rheims: Dr. Melbourne Greene, Extension Lecturer, University of California.

February 5.—Piano Recital: Dr. Henry Lanz.

February 12.—The Cause of the War: Mr. Sidney Coryn, of the San Francisco *Argonaut*.

February 19.—The Modern Movement in Painting and Sculpture: Mr. Alfonso Cornejo.

February 26.—Readings from his own works: Mr. John G. Neihardt, Bancroft, Neb.

March 5.—Concert, by the Schubert Club.

March 12.—Lecture: Bishop Edwin Holt Hughes, of Boston, Mass.

March 19.—All the Magazines: Mr. William Webster Ellsworth, former President of the *Century* Company.

Clubs and Associations

Spanish Club

December 5.—Mexico, Yesterday and Today (illustrated): Mr. William A. Énenkel.

ARCHAEOLOGICAL INSTITUTE OF AMERICA

December 7.—St. Peter and St. Paul in Rome: Professor FRANCIS WILLEY KELSEY, of the University of Michigan.

LECTURES ON AMERICA AND INTERNATIONAL LAW

March 4, 6, 7.—(1) The American Continents and the Future Society of Nations; (2) The Political, Economic, and International Problems in the American Continents After the War; (3) The New Monroe Doctrine and the Future International Law: Dr. ALEJANDRO ALVAREZ, Secretary-General of the American Institute of International Law, Member of the Permanent Court of Arbitration at The Hague.

PHYSICAL EDUCATION

February 8.—Remedial Gymnastics: the Opportunities it Affords the Teacher of Physical Education: Miss SIGNA HAGELTHORPE, of the University of California.

March 1.—Playground Work and Recreation: Miss WINIFRED VON HAGEN, Oakland.

POPULAR LECTURES IN LANGUAGE AND LITERATURE

November 20.—Cervantes: Instructor FELIPE MORALES DE SETIÉN.

November 27.—Development of Russian Literature: Dr. HENRY LANZ.

December 4.—The Divine Comedy: Professor OLIVER M. JOHNSTON.

February 19.—Some Modern Plays: Professor HENRY DAVID GRAY.

February 26.—Vergil, the Great Roman Poet: Professor HENRY RUSHTON FAIRCLOUGH.

March 5.—The Spanish National Drama: Professor AURELIO MACEDONIO ESPINOSA.

LANE MEDICAL LECTURES

The sixteenth biennial course of Lane Medical Lectures was given at the Stanford Medical School, San Francisco, by Dr. SIMON FLEXNER, Director of the Rockefeller Institute for Medical Research, New York City, as follows:

October 8.—Epidemic Meningitis, Lobar Pneumonia, Bacillary Dysentery, and Specificity in Bacterial Sera.

October 9.—Gaseous Gangrene, Shiga Bacillary Dysentery, and the Principles of Antitoxic Sera.

October 10.—Poliomyelitis and the Principles of Homoserum Therapy.

October 11.—Local Specific Therapy, as illustrated by the Serum Treatment of Epidemic Meningitis, Poliomyelitis, and Tetanus.

October 12.—Chemotherapy of the Spirochetal Infections.

Popular Medical Lectures

The thirty-sixth course of Popular Medical Lectures was given in Lane Hall, Stanford Medical School, San Francisco, as follows:

January 4.—The Control of Vice Diseases Among Troops Through Civil and Military Coöperation: Colonel L. U. Maus, U. S. A.

January 18.—Surgery of the Present War: Dr. Leo Eloesser.

February 1.—Industrial Fatigue: Professor Ernest Gale Martin.

February 15.—Food Poisoning From Canned Goods: Dr. Ernest Charles Dickson.

March 1.—Recent Experiences of a Medical Man in the War Zone: Dr. William P. Lucas, Professor of Pediatrics, University of California.

March 15.—Circulation of the Blood (illustrated): Dr. Arnold A. D'Ancona, of the University of California Medical School.

Musical and Dramatic Recitals

November 16.—Presentation of Edward Childs Carpenter's "The Cinderella Man," by Sword and Sandals.

November 21.—Presentation of "La Fête des Poupées," by Miss Alice Diaz, for the benefit of Belgian Relief.

February 15.—Presentation of "It Pays to Advertise," by the Sophomore Class.

February 25.—Old French Songs, by Yvette Guilbert.

March 7.—Junior Opera, "Betty's Boots," presented by the Junior Class.

peninsula musical association

November 15.—Concert by the San Francisco Symphony Orchestra, Mr. Alfred Hertz, conductor.

January 17.—Concert by Mr. Leopold Godowsky, Pianist.

February 21.—Concert by Mr. Efrem Zimbalist, Violinist.

March 11.—Concert by Mr. Theodore Karle, Tenor.

Phi Beta Kappa Open Meeting

May 19, 1917.—Address, The Idea of a University: Professor George James Peirce. Poem, This May in America: Professor John S. P. Tatlock.

Commencement

May 21, 1917.—Commencement Address, Idealism and National Policy: Vice-President John Maxson Stillman. Address to the recipients of degrees: President Ray Lyman Wilbur.

The Raymond Fred West Memorial Lectures on Immortality, Human Conduct, and Human Destiny

"In memory of our beloved son, Raymond Fred West, a student in Leland Stanford Junior University, who was drowned in Eel River, California, on January 16, 1906, before the completion of his college course, we wish to present to the trustees and authorities of the Leland Stanford Junior University, at Palo Alto, California, the honored Alma Mater of our son, the sum of ten thousand dollars, to be held as a fund in perpetual trust, for the establishment of a lectureship on a plan similar to the Dudleian Lectures and the Ingersoll Lectures at Harvard University. . . .

"It is our wish that such lectures shall not form part of the usual college or university course, nor shall they be delivered by any professor or instructor in active service in the institution. Such lecturer may be a clergyman or a layman, a member of any ecclesiastical organization, or of none, but he should be a man of the highest personal character and of superior intellectual endowment. He shall be chosen by the Faculty and the Board of Trustees of said University in such manner as the said Board of Trustees may determine, but the appointment in any case shall be made at least six months before the delivery of said lecture. . . .

"The course of lectures shall be known as the 'Raymond Fred West Memorial Lectures on Immortality, Human Conduct, and Human Destiny.'"

In accepting this gift from the donors, Mr. and Mrs. Fred West, of Seattle, Washington, and establishing the lectureship as provided in the terms of the gift, the University has adopted the following plan and regulations:

That these lectures be delivered in alternate years, the first in the year 1911; that the lecturer give at least three lectures; that these lectures be published in book form within not less than two years; that the lecturer have the option of publishing them himself, in which case the University will purchase a hundred copies, or of having the University publish them, in which case it will retain the copyright. In any case, the manuscript of the lecturer must be filed in the University archives;

That the honorarium given be decided in each case by the Board of Trustees, and that unless otherwise ordered the entire earnings of the West fund for the two years be devoted to honorariums and to the purpose of publication;

That the West Lecturer be each time nominated by the President,

with the approval of the Advisory Board, and the consent and ratification of the Board of Trustees, as is the case with ordinary appointments.

The lecturer for 1917-18 is JOHN DEWEY, Professor of Philosophy at Columbia University. The lectures will be given at the University, May 28, 29, and 30, 1918.

INTERCOLLEGIATE DEBATES

STANFORD-CALIFORNIA

An INTERCOLLEGIATE DEBATE, under the auspices of the Associated Students of the University of California and of the Leland Stanford Junior University, is held in November of each year. In 1917-18 the debate was held November 23, at Stanford University.

The question for discussion was, "Resolved, That in war time the federal government should employ conscription of labor to insure the necessary output of war materials." The contestants were WALTER IRVING AMES, '18, JOHN GERALD DRISCOLL, JR., '18, MARGARET COCHRAN SHEDD, '20, of Stanford; WILLIAM MCALLEN GREEN, '19, MILDRED LITTLE, '19, and JACOB JOSEPH POSNER, '19, of the University of California.

No judges were appointed and no formal decision followed the debate.

JOFFRE

The MEDAILLE JOFFRE, presented by the Baron de Coubertin, for the purpose of encouraging the study and discussion, in California, of French history and politics, is awarded annually to the student who, in the opinion of the judges, proves himself the best debater in a contest held for that purpose between Stanford University and the University of California.

Under the rules of the contest the general subject for discussion in 1917-18, "The Bureaucratic System of France," was announced in January, 1918. The contest occurs April 19, and the particular phase of the question to be discussed will be made known to the contestants two hours before the time set for the debate.

STANFORD-SOUTHERN CALIFORNIA

Under the auspices of the Associated Students of the University of Southern California and of the Leland Stanford Junior University a debate is held in March on some question determined by mutual agreement.

In 1917-18 the question will be, "Resolved, That in war time the federal government should employ conscription of labor to insure the

necessary output of war materials." The debate will be held at the University of Southern California on the evening of March 8.

The Edward Berwick Junior Peace Prize

Under the auspices of the California Branch of the American Peace Society, an annual prize of fifty dollars, called the Edward Berwick Junior Peace Prize, is offered for competition by undergraduate students of Stanford University. The award is made to that speaker who, in a public contest, delivers the address which in the opinion of the judges is most effective in promoting the cause of international peace. A student who has once won the peace prize is not eligible to participate again in the contest. In 1917-18 no contest was held.

Intercollegiate Prohibition Oratorical Contest

Under the auspices of the Intercollegiate Prohibition Association, the sum of one hundred dollars is offered annually for the best orations on some phase of the subject of Prohibition. This sum is divided into prizes of fifty, thirty, and twenty dollars each for the three best orations submitted.

Each competitor must deposit the manuscript of his oration with the Registrar on or before a fixed date in March. The manuscript must not be signed, but should bear some mark of identification and be accompanied by a sealed envelope containing the name of the author. A limit of fifteen hundred words is prescribed.

The orations are first graded by judges on thought and composition. Later a public contest is held at which time the contestants present their orations orally and are judged on delivery. The combined markings of the judges of the manuscripts and the spoken orations shall determine the successful contestants. The winner of the first prize is qualified to enter the State Intercollegiate Prohibition Contest to compete for a prize of fifty dollars. This latter contest is held some time in April. A National Contest is held every two years to which winners of State prizes are eligible. Prizes of fifty and one hundred dollars are offered in this contest.

Philological Association

Professor John S. P. Tatlock, President.
Associate Professor Aurelio Macedonio Espinosa, Vice-President.
Instructor Charles Reining, Secretary.

The University Philological Association was organized September 17, 1892, for the purpose of reading and discussing results of scientific

investigations in language and literature. The membership consists of the instructors and advanced students in the different language departments in the University. The regular time of meeting is the afternoon or evening of the first Thursday in the second and third months of each quarter. The following is the program of the first three meetings of 1917-18:

November 8.—(1) The Split Infinitive: Professor William Herbert Carruth; (2) Indian *pone* 'bread' and its fortunes in America: Professor George Hempl.

December 13.—(1) Notes on the Odyssey: Professor Augustus Taber Murray; (2) German Folklore and Tradition in Art and Poetry: Professor Karl Gustav Rendtorff.

February 14.—(1) Shakespeare's Tragedy of Dido: Professor Henry David Gray; (2) The Study of English Syntax: Dr. Arthur Garfield Kennedy.

Science Association

Associate Professor Clara S. Stoltenberg, President.
Assistant Professor Frank Walter Weymouth, Secretary.

The Science Association was organized January 17, 1894. Original investigations and papers of general interest on scientific topics are presented from time to time.

The following is the programme of meetings for 1917-18 (autumn and winter quarters):

October 31.—An Ammonia System of Acids, Bases, and Salts, with experiments: Professor Edward Curtis Franklin.

November 22.—The Mobilization of Gold in Time of War: Professor Murray Shipley Wildman.

December 12.—The Food Problem: Professor Vernon Lyman Kellogg.

January 23.—The Manufacture and Use of Oil Gas (illustrated): Professor Charles N. Cross.

February 20.—The Geology and Origin of the Ore Deposits of California (illustrated): Professor Cyrus Fisher Tolman, Jr.

MUSEUM AND ART GALLERY

LELAND STANFORD JUNIOR MUSEUM

Pedro J. Lemos, Curator.

In 1880, Leland Stanford, Junior, then eleven years of age, accompanied his parents on a trip through Europe, and collected numerous mementos of the places visited. In 1883, on a second visit, he began to pursue this object more ambitiously, and finally with the idea of establishing a museum. The Leland Stanford Junior Museum was designed by Mrs. Stanford as a memorial to perpetuate this idea, and the various collections are mainly her gift to the Museum.

The collection made by Leland Stanford, Junior, between 1880 and 1884, has been placed in two rooms (A and B), and in room A his own arrangement is reproduced in detail. In the room adjoining (B) are found mementos of his early life. These two rooms contain especially Egyptian bronzes, Tanagra figurines, Greek and Roman glass, armor, mosaics, Sèvres and Dresden ware, and the like.

The vestibule and upper corridor are devoted principally to copies of the old masters.

The Di Cesnola Collection (rooms C and E) contains five thousand pieces of Greek and Roman pottery and glass from the Island of Cyprus.

Room F contains the famous historical relic, "The Governor Stanford," the first locomotive used on the Central Pacific Railroad, in 1864.

The American Collection (I) is made up of mound relics, Indian baskets, Acoma ware, utensils, Alaskan canoes, totem poles, etc. In this room is also a display of material of the stone age purchased by Mrs. Stanford in Denmark. The center case in this room contains practically all the implements extant of the old Mission Dolores, presented by Don Pablo Vasquez, whose father was the last major-domo of the Mission. Included in the Mission collection are some extremely rare relics of Father Junipero Serra and the Carmel and Santa Barbara Missions.

Room J contains the Ikeda Chinese and Japanese collection, a choice collection of rare art material from the Orient. It was pur-

chased in 1904 by Mrs. Stanford, and was placed on exhibition again in 1916.

In the Chinese and Japanese room (K) there is a collection of bronzes, arms, china, lacquer, cabinets, musical instruments, rich embroideries, and specimens of wood-carving, including the Imperial bedroom set, a marvel in wood-carving and inlaid work. This room contains the famous de Long Collection of Japanese rarities.

Room L. The Japanese collection, purchased by Mrs. Stanford in 1902, consists of cloisonné, Satsuma, porcelain, embroideries, Buddhistic images, and ivory carvings. The large bronze Koro, over 150 years old, is especially noteworthy. The Corean collection, the gift of Mr. Timothy Hopkins, contains costumes, household goods, cabinets, screens, etc.

Room V contains the Anna Lathrop Hewes collection of paintings, statuary, mosaic, etc. Ceramics collected by Mrs. Stanford include Sèvres, Dresden, Royal Berlin, Persian, Pompador crystal, Bohemian, and numerous other wares.

In Room U has been installed the collection of Venetian glassware, mirrors and mosaic art pieces, presented by Messrs. Salviati & Camerino, of Venice, Italy. This is the largest collection of Venetian glassware in America and comprises almost every conceivable pattern.

The mosaic exhibit, which was made with the personal coöperation of Mr. Zampatto, shows the structural evolution of mosaic from the fusing of the glass to various finished pieces.

Through the courtesy of Wells Fargo & Co., all gifts intended for the Museum will be transported free of charge over their lines, in shipments of fifty pounds or less, from railroad points in California, Oregon, and Nevada, if addressed to The Curator, Leland Stanford Junior Museum, Stanford University, California.

Museum hours: 10:00 a.m. to 5:00 p.m.

THOMAS WELTON STANFORD ART GALLERY

Pedro J. Lemos, Curator.

The Thomas Welton Stanford Art Gallery is composed of four galleries designed for the exhibition of paintings and other works of art.

In the main galleries the collection of paintings donated by Thomas Welton Stanford is placed. Among these are pictures by Minderhout

Hobbema, James Giles, R. S. A.; John Frederick Herring, Lienur, Van der Houten, Francis Snyders, W. J. Laidley, David Bates, John Yarley, Julius M. Price, J. W. Ready, William Melby, James E. Meadows, Elijah Walton, F. G. S.; W. Henry, W. Koek-Koek, E. Wake Cook, T. R. Miles, Sr., John Glover, Herr Schnars-Alquist, Louis Buvelot, William Hart, William Shiels, R. S. A.; S. Bird, Patrick Nasmyth, Emil Bayard, Gerard Lairesse, C. Wimmer, Salvator Rosa, G. Koken, John Weenix, Bachman, Kobell, Jr., Charles Stuart, Heinrich Rasch, Melchoir Hondecooter, Marie Angelica Kaufman, Ten Kate, George Earl, Guardabassi, E. G. Lewis, and E. C. Curtiss.

The rear gallery has been planned for the exhibition of collections of paintings, etchings, and sculpture from eastern and foreign art centers. These exhibitions are announced from time to time as they are received.

The Art Gallery was completed during the latter part of 1917 and formally opened to the public January 6, 1918.

DEGREES CONFERRED

* September 8, 1916; † January 12, 1917; May 21, 1917.

BACHELOR OF ARTS

BACTERIOLOGY AND IMMUNOLOGY

Harold Enos Crowe

BOTANY

†Ellen Tupper Galpin
John Gray
Emma Priscilla Millett
Frank Leslie Nolan
*John French Phares
Caleb Emlen Scott

CHEMISTRY

†Charley Francis Clark
†Mildred Gould Cowdrey
Winifred Culp
John Hepburn Doebler
Laurence Dickenson Gardner
Paul McCully Goodwin
Fannie Hadden
Carol Edna Jameson
Elizabeth M. Judah
Donald Edward Ketcham
†Joseph A. McManus
Joseph Stacey Marriott
Arthur Bradley Meese
Frank Bartlett Mosher
Edith Rawcliffe Thompson
†Murray Eaton Tucker

ECONOMICS

Kingo Abe
*Robert Boynton Bleeker
Raymond Budd
Gaylord Carter Collins
Anita Barbara Colombet
Earl Scott Dysinger
Albert Marion Epperly
William Knowlton Eyer
Henry Abraham Frye
†Alda Ann Garwood
Hugh Emison Harris
Edith Isbell Harvey
*Chesley Warde Hatch
Percy Julian Hayes
†Harry Sawyer Hills
M. Lyle Holmes
William Foster Horner
Graeme Keith Howard
Richard Lorimer Johnston
J. Baxter Jouvenat, Jr.
†Fred Elton Keast
Florence Knapp
William Ellison Lockwood
Mary Susan McKenna
Dorothy Amanda Metz
†Rodney L. Mott

ECONOMICS (*Continued*)

Manley Axtell Moule
Yoshisuke Nakamoto
†Alfred Joseph Oyster
Garnet Cecil Rainey
Mary Ellen Stevick
Geneva Grace Stewart
Philip Joseph Twohy
Thomas Alexander Walbridge
Harold Davis Weber
†Buford Williams
Paul Langdon Williams
John Clarence Wood

EDUCATION

Harry Thomas Ashford
Emmett Joseph Buckles
Chester Arthur Chiles
Harold Francis Desmond
Ethel Eunice Emerson
Edward Goldberg
Lowry Samuel Howard
*Emily Oothout Lamb
Thomas Tsokwing Lee
Ruth Long
Hazel Leone Maurer
Ella Louise Roll
Laura Clair Stone
Gladys Lathrop Taylor
†Joseph Soll Turley
†Grace Agnes Withers

EDUCATION (Graphic Art)

Walter Winthrop J. Gores
Lucile Bernice Hinkle
*Esther Serena Liversidge
†Elizabeth Lee McDermott
Maybelle Claire Peck
†Eugene Andrew Schnell
Anna Vaal Stark
Alma Helen Steininger

ENGINEERING

CIVIL ENGINEERING

Elmer Ruel Ames
Ellard Ansel Bacon
Albert Frederick Berni
Clarke Wilkins Crocker
†Charles Maurice Denham
Harry Creed Fabling
†Albert Devereaux Griffin
†Samuel Thompson Halsted
Ernest Clyde Howard
Charles Angus Keith
†Oscar Kohner
Milton Lee Koll
†Joe Woon Lum
Thomas Carl McNeal
William Maxwell Marker
†Charles Hillegass Meyer
Bryant Tilden Millard
Stanford Wilbur Oberg
William Louis Popp
Franklin Orth Rose
W. Herrmann G. Ross
Emery Downing Sherwin
†Theodore Earl Swigart
George Harvey Taylor
Thomas Harold Townsend
Thomas Frederick Wason

MECHANICAL ENGINEERING

Adrien Louis Anderson
†Edwin Oliver Bennett
†Mervyn Joseph Cody
George Wendell Elsey
Earle William Frey
Dwight Beckwith Gladstone
Harry Rice Hammett
Fred George Hampton
James Irvine
Elton L. Jones
Lloyd Sumner Kinnear
Clarke Franklin Leh
Howard Wesley Lewis
Robert Donald Likely
Horton Albert McKim
Herman Potts Miller, Jr.
Arthur Leonard Morgan
†Willis Sherwood Norton
Herbert Colvin Parker
†William Lorenzo Rifenberick
Daniel William Rohrback
George Taylor Royden
†Henry Fumiya Sakuma
Carl Eugene Scholz
Andrew Mackay Smith
Leland Church Stearns

ENGLISH

Philip Van Ruysdael Adams
Helen Virgina Albee
Margaret May Biggar
Alice Irene Bridgers
James Daniel Bush
Sherwood Chapman
Nellita Naomi Choate
Joseph Cameron Cross
Lorna Grace Donaldson
Marjorie Bishop Dysinger
†Roland Fred Eberhart
Mayowen Edwards
Phyllis Margaret Ellison
Doris Elfrida Estcourt
Fauna Wynne Farris
Mary Elizabeth Fearney
*Jessimine Mabelle Hunt
Edna Esther Ingels
Edwin Field Lawrence, Jr.
Edna Loftus
Harriett Rosa-Lee McCausland
Laura May McCreary
Herbert Stanton Marshutz
†Mabel Alta Miller
†Alice Moore
Sidney Fremont Moore
Phyllis A. M. Peckham
Benjamin Witwer Pelton
Helen Myranda Peterson
Mary Bolton Post
†Margaret Rose Richter
Katherine Anne Sheldon
Carolyn Elen Simpson
†Helen Godfrey Spalding
Marguerite Dare Stark
Taka Takanashi
†Edwin Walter Unangst
Gladys Lucile Walker
Lansing Warren
Edwin Willimann
Jessie Belle Wood

ENTOMOLOGY

Mildred Elsie Clifford
*William Weller Curtner

GEOLOGY AND MINING

Otis Emmons Briggs
Horace Hayes Dubendorf
†Byron Parlier Fox
Waldron A. Green
Allan Sidney Hayes
†Godfrey Ernest Holloway
†Vernon Leslie King
†James Ogier Lewis
†Walter R. Malm
†Zenas K. Melcon
†Edward Dana Nolan
John Stanley Ross
Herbert Mark Stanley
Bruce Wallace
†Leslie Milton Wolf

GERMANIC LANGUAGES

Alice Naomi Barnhouse
†Emma Marguerite Brix
Mildred Lorenz Johnson
Arletta Inez Klahn
Elizabeth Bernice Lormer
Grace Henrietta Steinberger
Gretchen Elisabeth Uhl

GREEK

Beatrice Maddock Brasefield
Francis King Murray

HISTORY

George Harold Anderson
Mary Ann Beaver
†Marian Dickinson Boal
†Mary Florence Carney
Katharine Elva Cottle
†Georgia Estelle Crim
†Natalis Joseph V. D'Ambrogio
Florence Starr Elsey
Edmond Eugene Fout
Geraldine Mary Hamlyn
Clare Holcomb
†Hugh Paul Kegley
Helen Bell Ledyard
Elizabeth Stanley Maynard
Bernhard Frederick Nordmann
Eleanor Norton
Emily Gilman Peck
†Flora May Preston
Guy Joseph Roney
Leigh Claiborne Shelton
†Luella Sweeney
Bernice Brooks Tompkins
Faye Wright

LATIN

Rofena Maude Beach
†Marjorie Lewis Dean
Helen Kathleen Greening
Marie Mildred Hanna

LAW (Pre-legal Curriculum)

Wilmur Claire Anspach
Frank Leroy Baumgartner
James Stevenson Bullis
†Wilbur Franklin Coe
Ben Vogel Curler
Mark Davids

†Harry John Denhart
Floyd Everett English
Willard Taylor Evenson
Donald Adams Hawley
†Orval Jewel Hefflefinger
Hayden Lewis Hews
John Connell Holland
William Rowsell Hunt
Victor Hyatt
Norman Ramsey Jensen
Harry Cranston Johnstone
Carl Smith Kegley
Edgar Crossman Kester
John Evans Kimber
Andrew Koerner
Frank Jacques Leard
Roland Marquam Lockwood
†David Ferdinand Loepp
Ray Blanchard Lyon
Robert Sidney Lytle
Marshall Francis McComb
James Patrick Mackel
James Douglas McLachlan
†Waldo Swiers Miller
†Charles Dunn Moore
Wendell Keigh Phillips
John Henry Russell
Stanley Stolz Schnetzler
†Carroll John Single
Frederic Edward Supple
John Joseph Taylor
Malcolm Edward Tedford
Ira Leroy Thomason
Charles Thomas Vandervort
James McOuat Wallace
Z. Bertrand West, Jr.
Ernest Elias Williams

MATHEMATICS

Marian Humphrey Allhands
Anita Marcus
†Elizabeth Russell
Crystal Sayre

PHILOSOPHY

Kenneth Oborne Cuttle
Robert Allen Griffin
Dennison Alexander Russell

PHYSICS

Leland Rice Skelton

PHYSIOLOGY AND HISTOLOGY

Goichi Asami
Manuel Leal Azevedo
Ruth Bacon
Thomas Sheridan Carey
Sigurd von Christierson
Harold John Cooper
William Whitfield Crane, Jr.
Leland Wadsworth Ellis
Charles Rousseau Fancher
Orrie E. Ghrist
Frank Reed Johnston
Ralph Dougall Lillie
Gunther W. Nagel
Walter Ferris Pritchard
Willoughby Park Richardson
Charles Henry Rogers
Dwight Emerson Shepardson
Wilber Frank Swett
Helen Lucile Williamson

PSYCHOLOGY

Rea Gilbert
†Gwendolin Smith
Joy Edwarda Tuck

ROMANIC LANGUAGES

Hazel Allin
Marion Elizabeth Drown
Lucy Alice Hall
Ida Gertrude Hollister
†Margaret Mary Mathews
Laura Maud Sanford
Elrington Margaret Swingle
†Elsie Katharine Wingood
Grace Mary Wood

ZOOLOGY

Margaret Reese Evans

BACHELOR OF LAWS

Herbert Leonard Hahn
William Francis Noonan
William Glae Paul

MASTER OF ARTS

BOTANY

Claribel Ruth Boesch, A. B.
Serena Phillips, A. B.

CHEMISTRY

Norris Watson Rakestraw, A. B.

ECONOMICS

Julius Benedict Bearnson
B. S., Utah Agricultural College
Mary Josephine Beebe, A. B.
Georgia Haffner, A. B.
Albert John Hettinger, Jr., A. B.
Floyd Mercer, A. B.
Louise Overacker, A. B.

EDUCATION

Irene Rose Lucile Cuneo, A. B.
Virgil Everett Dickson
A. B., State College of Washington
Jesse Knowlton Flanders
A. B., Bates College
Margaret Bradford Hopwood, A.B.
Ocheltree Seawell Hubbard
B. L., University of California
Herbert Edward Knollin, A. B.
John Kelley Norton, A. B.
Ethel Turner Stoneman
A. B., University of West Australia
†Ethel Bushnell Waring
A. B., University of Illinois

EDUCATION (Graphic Art)

Esther Serena Liversidge, A. B.

Charlotte Augusta Morton
B. S., Kansas State Agricultural College

ENGLISH

Elinor Valoy Cogswell, A. B.
Harriet Hayes, A. B.
Lillian Marion Jameson
A. B., Wellesley College
Frances North, A. B.
Helen Patricia O'Brien
A. B., College of the Pacific
Katherine Annie Ommanney
A. B., Colorado State Teachers College
Gertrude Robert Sherer
B. L., Smith College

ENTOMOLOGY

Dorothy Barnes Egbert, A. B.
Otho James Gilliland, A. B.
Robert Kingston Vickery, A. B.

GEOLOGY

Wayne Frederick Loel, A. B.

GERMAN

*Eva Frances Davidson
B. S., Mt. Holyoke College
Hazel Margreta Fisher, A. B.
Carrie Della Wright
A. B., Smith College

GREEK

*Flora Marie Rausch, A. B.

HISTORY

Clayton Douglas Carus, A. B.
George Charles Hodges, A. B.
†Ruby Meta Kerr, A. B.
Eloise Thornton Langmade
A. B., Smith College
Dorothy Janet Simon, A. B.
Olive Lillian Yoder, A. B.

LATIN

Minerva M. Anderson, A. B.
Melinda Enke, A. B.
Geneva Johnson
A. B., Whittier College
Mary Webster Kramer, A. B.

MATHEMATICS

Hazel Stevenson Goss, A. B.
Evelyn Gladys Haydock, A. B.

PATHOLOGY

†Engelena Susan Ward
A. B., University of California

ROMANIC LANGUAGES

Alice de Bernardi, A. B.
Jere Turpin, A. B.
Jessie Edna Smith, A. B.

ZOOLOGY

William Weller Curtner, A. B.
Carl L. Hubbs, A. B.

ENGINEER

CHEMICAL ENGINEERING

Gaston Jack Levy, A. B.
Robert Nicolas Wenzel, A. B.
Harry Eugene McMahon, A. B.

CIVIL ENGINEERING

Elliott Bandini, A. B.

ELECTRICAL ENGINEERING

Isamu Mayeda, A. B.
Glenn William Wilson
E. E., University of Minnesota

MECHANICAL ENGINEERING

Valentine Richard Garfias, A. M.

JURIS DOCTOR

†Carl Clifford Baker
A. B., University of Oregon
†Floyd Davidson Black
A. B., University of Kansas
†Harry Joseph Bordé, A. B.
Albert Grover Bradford, A. B.
John Breuner, Jr., A. B.
Frank Valpey Campbell, A. B.
*Otis Henry Castle, A. B.
*Floyd Wellesley Cowan, A. B.
William Campbell Dalzell, A. B.
†Agustus Sloan Flack, A. B.
Arthur Abraham Goldsmith, A. B.
†James Andrew Miller, A. B.
Waldo Swiers Miller, A. B.
Francis Anthony O'Connell, A. B.
Joseph Arlington Partridge, A. B.
Altha Perry, A. B.
†Frank Herbert Richey, A. B.
Laclair Davidson Schulze
A. B., University of California
Talmage Laughner Smith, A. B.
Lloyd Croasmun Stevens, A. B.
Edwin Warren Toole
Ph. B., Yale University
Wesley R. Whitaker, A. B.

DOCTOR OF MEDICINE

Walter Crawford Adams
B. S., University of Michigan
Carlton Leverett Andrus, A. B.
George Long Barry, A. B.
Claude Everett Brown, A. B.
Donald Cass, A.B.
John Paul Degnan
A. M., University of Santa Clara
Mary Monica Donovan, A. B.
Eva Lillian Durgin, A. B.
Rubie Mae Durgin, A. B.
Alfred Hjalmar Ehrenclou, A. B.
Lynn Newton Hart
George K. Hashiba, A. B.
Marion Reginald King, A. B.
Orta Edward Kuhn
A. B., Baker University
Kay Gustav Lorentzen
A. B., Beloit College
George Wilber Millett, A. B.
Frank Roy Stewart Missner, A. B.
Edward Francis Mullaly, A. B.
Ethel Dale Owen, A. B.
Harry Jeroam Pruett, A. B.
Lorruli Anna Rethwilm
A. B., Washington University (St. Louis)
John Egbert Stevens
B. S., Occidental College
*Irene Amanda Tognazzini, A. B.

DOCTOR OF PHILOSOPHY

BOTANY

John Shaw Boyce
M. S., University of Nebraska

CHEMISTRY

†Paulus Gerhard Albrecht
Universities of Heidelberg and Kiel

GEOLOGY

Frank Nelson Guild
M. S., University of Vermont

LATIN

Anna Shipley Cox, A. M.
Katharine A. Lummis, A. M.

PHYSICS

Dayton Ulrey
A. M., University of Indiana

FELLOWS AND SCHOLARS

Thomas Welton Stanford Fellowship in Psychic Research

John Edgar Coover.....Stanford University
A. B., Stanford, 1904, A. M., 1905, Ph. D., 1912

Buckel Fellowship in Education

Samuel C. Kohs.....Palo Alto
B. S., College of the City of New York, 1912.

University Fellowships

Alfonso Cornejo, Chemistry.....Palo Alto
University of Leipzig

Frederick Paul Vickery, Geology.....Saratoga
B. S., California, 1905

Teaching Fellowships in Chemistry

Gaston Jack Levy.....San Mateo
A. B., Stanford, 1916, Engineer, 1917

Norris Watson Rakestraw.....Los Angeles
A. B., Stanford, 1916, A. M., 1917

Alumni Jordan Scholarships in Medicine

Roscal Leroy Draper.....Arroyo Grande
A. B., Stanford, 1913

Lloyd Robinson Reynolds.....Upper Lake
A. B., Stanford, 1915

Leland Stanford Junior Memorial Scholarship

Selling Brill, '19.....Portland, Ore.

W. J. Dickey Scholarships

George Hurach Cloud, '19 (beginning winter quarter).....Fresno
Shungo Furui, '20 (beginning winter quarter).....Selma
Robert Knudson, '20 (autumn quarter).....Kingsburg
Richard Aga Montague, '21 (autumn quarter).....Reedley

B. G. Higley ('99) Scholarship

Gwendolen Harriet Garsed, '18.....Palo Alto

Bertha Hyde Braly Scholarship

Georgia Helen Bentley.....Palo Alto
A. B., Stanford, 1915

Mrs. McDowell Roble Club Scholarship

Helen Westerman, '18 (autumn quarter).....Sutter Creek
Rose Marie Kelley, '18 (beginning winter quarter).....Redlands

Law School Scholarship

John Homen Machado.....San Luis Obispo
A. B., Stanford, 1916

Sorority Scholarship

Lucile Townley, '18.....Stanford University

STUDENTS

Name; home residence; major subject; status; University residence; post-office. Post-office in all cases *Stanford University* except where university residence is followed by initial letter of town ('p' indicates *Palo Alto* post-office; 'Mayfield-m,' *Mayfield* post-office, etc.). Street address *Palo Alto* or *Campus* unless otherwise named.

Status.—gr., graduate student; sp., special student; unc., unclassified law. The figures after major subject indicate the number of units of university work completed (and counting toward the 180 units required for graduation), no account being taken of 'deferred,' 'incomplete,' or 'conditioned' work. The asterisk (*) indicates registered *in absentia;* the double dagger (‡) indicates unadjusted standing from other colleges and universities. (Phys.-Physics; Phyl.-Physiology.)

The superior number 1 prefixed to the name of a student indicates registration for the autumn quarter only; 2 indicates winter quarter only.

[2]Abbott, Jane Lamb Mills College.	Clinton, Ia.	Econ. gr.	Madrono
[1]Abbott,WilliamLindley	San Francisco	PreL. 59	Phi Delta Theta
Abel,JamesFrederick A. B., Nevada, 1901.	ParadiseHill,Nev.	Educ. gr.	42 Encina
[1]Abinanti, Harry Samuel	San Francisco	Phyl.	Kappa Alpha
Abraham,ArthurWilliam	Los Angeles	Geol. 113	216 Encina
Abrams, Harry William	Naco, Ariz	Geol. sp. 36	Theta Delta Chi
Adams, Agnes Irene	Los Angeles	Econ. 103	73 Roble
Adams, Frederick Lawson	Sacramento	C. E. 17	Phi Gamma Delta
Adams, Lawrence Alfred	Santa Clara	Chem.92	1417Franklin,SC-sc
Affleck, Augustus James	Sacramento	Phyl. 16	250 Encina
Aguerrevere, Enrique	Caracas,Venezuela	C. E. ‡ 15	El Camino
Aguerrevere,PedroIgnacio	Caracas,Ven.	Geol. 68	El Camino
[1]Aicher,GertrudeCatherine	SanFrancisco	Ed. G. A. 8	52 Roble
Albee, Helen Virginia A. B., Stanford, 1917.	Eureka	Engl. gr.	83 Roble
Albouze,AchilleRaymondJ.	SanFrancisco	Chem. 67	536 Encina
Alexander, R. Carroll	Salinas	Engl. 13	114 Encina
[1]Allen, Anita	Palo Alto	Ger. 139	601 Melville-p
Allen, Eleanor May	Pasadena	Engl. 63	Alpha Phi
Allen, Martha Lucille	Pasadena	Ed. G. A. 59	Alpha Phi
Allen, Niel Richardson	Salem, Ore.	Law 152	128 Encina
Allen, Wilford Carter, Jr.	Salem, Ore.	Econ. 13	409 Encina
Allin, Hazel A. B., Stanford, 1917.	Pasadena	Sc. Ed. gr.	Alpha Phi
[1]Amaral, Lucis Campos	Irvington	Chem.	139 Encina

Ames, Katherine Elizabeth	Los Angeles	Engl. 124	DeltaDeltaDelta
Ames, Phyllis Edith M.	Palo Alto	Span. 52	319 Middlefield-p
Ames, Walter Irving	Ontario	Law 109	49 Encina
Amphlett, Janet Edyth	San Mateo	Fr. 71	70 Sycamore,SM-sm
Amsden, Frances Hulbert	Los Angeles	Hist. 1	Delta Gamma
[1]Amundsen,WilfredBarbeck	OceanPark	Geol. sp. 4	Delta Tau Delta
Andersen, Agnes Camille	Spokane,Wn.	Math. 57	5 Roble
Andersen,EmelieEleanor	Spokane,Wn.	Engl. 110	9 Roble
Anderson,DavidMcCulloch	Santa Ana	Geol. 62	Theta Delta Chi
Anderson, Ejner Carl	Kingsburg	Chem. 9	137 Encina
Anderson, George Harold	Palo Alto	Hist. gr.	856 Middlefield-p
A. B., Stanford, 1917.			
[1]Anderson,JohnA.	Rossland,B.C.,Can.	FreL. 48	526 Encina
Ankele,CordesWesterfield	SanFrancisco	Phyl. 79	Chi Psi
[2]Ankele, John Henry, Jr.	San Francisco	Econ.	Chi Psi
Anthony, Arthur Bruce	Sunnyvale	Econ. 109	Sunnyvale-s
Antrim, Walter Ellett	Cairo, Ill.	Ed. G. A. 97	ThetaDeltaChi
[2]Aoki, Tamotu	Tokyo, Japan	Phys. gr.	345 Hamilton-p
Imperial University, Tokyo, 1909.			
Appleton, Louis Ellsworth	San Jose	Phyl. 64	546 S. 12, SJ.-sj
Armstrong, Gilbert Randolph	Alturas	Econ.	59 Encina
Armstrong,RobertHenry	Phoenix,Ariz.	Hist. 15	Delta Chi
[1]Arnald, John Stuart	Helena, Mont.	Law 112	Phi Kappa Sigma
[1]Arnold, Edward Willingham	Riverside	Law 129	Kappa Alpha
Ashford, Huron K.	Honolulu, T.H.	Law gr.	402 Encina
A. B., California, 1914, B. S., 1916.			
[1]Aurell, Verner C.	McPherson, Kan.	Econ. 150	326 Encina
[1]Austin, Raymond Braynard	Modesto	Econ. 5	232 Encina
Auzerais, Phyllis M	Aberdeen, Wash.	Hist.153	KappaKappaGamma
Averill, Harold Light	Portland, Ore.	Chem. 13	650 Waverley-p
[2]Avison, Edith Sophia	Long Beach	Ed. G. A. 42	5 Roble
[1]Azevedo, John Anthony	Sacramento	Phyl. 132	142 Encina
Azevedo, Manuel Leal	Sacramento	Med. gr.	255 Homer-p
A. B., Stanford, 1917.			
[2]Babcock,StephenH.,Jr.	SaltLakeCity,U.	M. E.	Phi Kappa Psi
Baber, James Albert	Los Angeles	Law 98	323 Encina
de Back, Emery Edgar	Watsonville	M. E. 13	206 Encina
[1]Bacon, Asaph Perry	Los Angeles	Law 132	Theta Delta Chi
Bailard,CatherineThurmond	Carpinteria	Hist. 60	72 Roble
Bailard, Ellen White	Carpinteria	Fr. 60	72 Roble
Bailey, Francis Paul	Hillsboro, Ore.	Phyl. 11	Phi Kappa Psi
Bailey, Harvey Dillon	Asotin, Wn.	Law 126	Phi Delta Theta

Bailey, Paul	Niles	C. E. gr.	Niles-n
B. S., California, 1910.			
Bailiff, Laurence Deane	Los Angeles	Span. 170	506 Encina
Baiocchi, Adolph John	San Jose	Med. ‡	2102 Calif.,SF-sf
[1]Baker, Harry Vincent	Grimes	Phyl. 73	15 Encina
Bald, Margaret	Ojai	Span. 186	40 Roble
A. B., Stanford, 1918.			
Ballinger, Richard T.	Seattle, Wn	Econ. 15	Zeta Psi
Barber,WilliamRichmond	Stanford Un.	Chem. 95	227 Encina
Barker, Albert Charles	Palo Alto	Educ. 169	633 Hamilton-p
Barker, Chester Wing	San Jose	Engl. 163	328 Encina
[1]Barker, Nettie Hindry	Palo Alto	Lat. gr.	633 Hamilton-p
A. B., Stanford, 1897, A. M., 1898.			
Barkway,EmilyWilhelmina	Mount.View	Ed. G. A. 61	Sigma Kappa
Barnard, Leonard Bryan	Niles	PreL. 56	El Camino
[1]Barneson, Harold James	San Mateo	Geol. 56	Beta Theta Pi
Barnett, Edwin Dwight	Santa Rosa	Chem. 12	Escondita Rd.
[2]Barney, Earle Sevier	Union City, Tenn.	Law gr.	437 Encina
A. B., Stanford, 1916.			
Barnhart, Carra Cobb	Coyote	Ed. 82	Gamma Phi Beta
[2]Barnhart, Harriet Gleives	San Diego	Hist.	Pi Beta Phi
[1]Barr, Allan Stone	Upland	Econ. 182	308 Encina
A. B., Stanford, 1918.			
Barr, Frank Elmer	Palo Alto	Educ. gr.	325 Kipling-p
B. S., Ottawa, 1904; B. Pd., Colorado State Teachers College, 1908.			
[1]Barroll, Elizabeth Bone	Pasadena	Fr. 79	KappaKappaGamma
Barry, David Noble, Jr.	Los Angeles	Econ. 61	Delta Tau Delta
Bartle, Gerald Fremont	Monrovia	Econ. 16	401 Encina
Barton, Eugene DeHart	Palo Alto	Econ. ‡14	339 Kellogg-p
[1]Barton, Paul Wilton	Palo Alto	Law ‡37	339 Kellogg-p
[1]Batchelder, Albert Perkins	Millbrae	Ent. 126	216 Encina
Bates, George Brigham	Pasadena	Econ. 70	535 Encina
Baughman, Elmer Jacob	Mayfield	M. E. 91	Mayfield
Baughman, Imo Pearl	Los Angeles	Chem. ‡10	79 Roble
[2]Beach, Eleanor Lee	Palo Alto	Fr.	683 Hamilton-p
[1]Beal, Ira Ayer	Campbell	M. E. ‡6	Campbell-c
Beaver, Mildred	Palo Alto	Hist. 174	475 Forest-p
Becker, George Henry	San Francisco	Med. gr.	667 Hamilton-p
A. B., California, 1916.			
Becker, Helen Rouse	Artesia	Hist. 57	61 Roble
Becker, Hugo Herman	El Paso, Texas	Chem. 60	22 Lasuen
Beckman, Philip Enoch	San Francisco	M. E. 13	650 Waverley-p

[1]Beckstrom, Elmer Gustav A. B., Stanford, 1918.	Kingsburg	Chem. 180	200 Encina
Beckwith, Ida Marian	Palo Alto	Fr. 16	318 Emerson-p
Beckwith, Palmer	Los Angeles	Geol. 98	SigmaAlphaEpsilon
Behn, Harry Kay, Jr.	Phoenix, Ariz.	Geol. 8	Theta Xi
[2]Behrens, Louis Adelbert	Redwood City	Econ.	Redwood City-rc
Bell, Georgia Washington	St. Helena	Econ. 104	17 Madrono
Bell, Thomas Gregory	Sacramento	Chem. 60	207 Encina
Bellingall, Lolita	Oakland	Span. 107	KappaAlphaTheta
Bender, Lauretta	Los Angeles	Chem. 48	Roble
[1]Benedict, Shirley L.	Hanford	Hist. 9	28 Alvarado
Bennett, Alfred G.	Los Angeles	Econ. 14	Theta Delta Chi
Bennett, Margaret Elaine	Palo Alto	Hist. 163	905 Scott-p
[2]Bent, Wylie Chandler	Madison, Wis.	Econ. 46	Alpha Delta Phi
Bentley, B. Howard	Palo Alto	Geol. 8	704 Waverley-p
Bentley, Georgia Helen A. B., Stanford, 1915.	Palo Alto	Bot. gr.	635 Homer-p
Bentz, Helen	Pasadena	Span. 10	Pi Beta Phi
Berendsen, Lloyd Hinz	San Francisco	Econ. 111	Chi Psi
Bergerot, Edmond P.	San Francisco	Fr. 12	Theta Xi
Bergstrom, Francis Wm.	Stanford Univ.	Chem. 157	25 Salvatierra
Berlin, Alfred Brooks	Turlock	PreL. ‡11	Delta Tau Delta
de Bernardi, Alice A. B., Stanford, 1916, A. M., 1917.	Santa Rosa	Span. gr.	Madrono
Betts, Forrest Arthur	Phoenix, Ariz.	Law 90	433 Encina
Bevier, George, Jr. A. B., Stanford, 1912.	San Francisco	Med. gr.	863 Bush, SF-sf
[1]Bevier, Raymond Keller	Spokane,Wn.	Chem. 71	444 Encina
von Bibra, Carl Johann	Los Angeles	Chem. ‡5	742 Bryant-p
Bilger, Carl Henry	Los Angeles	Econ. 13	357 Encina
Bills, Edgar William	Coalinga	M. E. 5	712 Bryant-p
Bills, Florence Elizabeth	Sacramento	Ed.G.A.105	KappaAlphaTheta
Bills, Walter Leonard	Coalinga	C. E. 14	712 Bryant-p
Bingham, Randolph V.	Portland, Ore.	M. E. 115	Beta Theta Pi
[1]Binkley, John Toute	San Francisco	Fr.	Encina
[1]Binkley, Mary Elizabeth	Palo Alto	Geol. 55	203 Tennyson-p
[2]Bird, Milo Alfred	Melones	Chem. 48	12 Encina
Blanchard,EverettEllis	Ladysmith,Wis.	Math. ‡13	13 Encina
Blewett, Frances	Palo Alto	Engl. 14	737 Bryant-p
[2]Blücher, Ossie	Palo Alto	Econ.‡	352 Everett-p
Bocks, Marion Elise	Cupertino	Ed. G. A. 147	Cupertino-c
Boezinger, Humbert Arthur	Palo Alto	Chem. 14	176 Bryant-p

Bohanon, Harvey Lee	San Diego	C. E. ‡15	303 Encina
Boise, Gladys M.	San Jose	Engl. gr.	396Margaret,SJ-sj
A. B., Michigan, 1913.			
[1]Bolinger, Donley	Orange	Law 165	559 Encina
Bonnett, Irene Bates	Riverside	Engl. 97	Delta Gamma
Bontz, Ethel Florence Mary	Palo Alto	Engl. 15	Laurel Ave.-p
Bontz, Mildred Katherine	Palo Alto	Lat. 150	Laurel Ave.-p
Borland, Norman Burns	Martinez	Law 208	544 Encina
[1]Borst, Deborah Adaline	Coalinga	Hist. 39	84 Roble
Bothwell, Floyd B.	Salt Lake City, Utah	Geol. 64	Phi Kappa Sigma
Botsford, Dorothy	Los Angeles	Econ. 154	KappaAlphaTheta
[1]Boudreaux, Ray Hubert	Menlo Park	Geol. 5	353 Encina
Boulware, Alice	Palo Alto	Ed. G. A. 16	170 Bryant-p
Boulware, Helen Keith	San Jose	Engl. 83	415 S. 14th, SJ-sj
Bowden, Jerome Trimble	San Jose	PreL. 60	Delta Upsilon
Bowen, Leon Luther	Santa Monica	Chem. ‡17	446 Encina
[1]Bower, Helen Modjeska	Los Angeles	Hist. 28	Alpha Phi
Boyd,Edwin Forrest	San Francisco	Med. gr.	2201 Calif.,SF-sf
A. B., Stanford, 1915.			
Boyd, Hugh Thomas	Spreckels	Engl. 123	Alpha Sigma Phi
[1]Boyd, Veronica Elinor	San Carlos	Math. 57	San Carlos-sc
[2]Boyle, James Thomson	Los Angeles	Pre L. 19	Delta Upsilon
Boynton, Kennison Swett	Ferndale	Chem. 106	546 Encina
Boys,MasonBowden	Independence,Kan.	Econ. ‡10	PhiGammaDelta
[1]Brandon, James Carter	Medford, Ore.	M. E. ‡2	Beta Theta Pi
[2]Brandt, Robert Louis	San Mateo	Chem.	322 Grand, SM-sm
Braunschweiger,EdwardFred	Palo Alto	Econ. 14	1005 University-p
Brazil, Waldemar Hagberg	Castroville	M. E. 16	11 Salvatierra
[1]Brewer, Edward W., Jr.	Boston, Mass.	Law gr.	660 Waverley-p
A. B., Harvard, 1914.			
Bridgers, Curtis A.	Imperial	PreL. 49	507 Encina
Briggs, Samuel Eustace	Pasadena	Chem. 111	406 Encina
[1]Bright,WilliamOldham	Ft.Scott,Kan.	Chem. 85	222 Encina
Brill, Selling	Portland, Ore	Chem. 96	331 Encina
Brinkmann,HeinrichWilhelm	Riverside	Math. 64	Escondita Rd.
[1]Brix, Karl Herman	Fresno	PreL. 25	Kappa Sigma
Broch, George Crossman	Los Angeles	Econ. 10	Delta Tau Delta
Brod, Harry Albert	Los Angeles	Chem. 107	742 Bryant-p
[1]Brooks, Earl Alvin	Visalia	Engl. 56	141 Encina
Brooks, Irene Lucile	El Centro	Fr. 160	22 Roble
[1]Brown, Charles Milton, Jr.	Redlands	Hist. ‡	49 Encina
Brown, Elizabeth	San Mateo	Fr. 15	Chi Omega

Brown, Elizabeth Louise	Palo Alto	Econ. 13	435 Hamilton-p
Brown, Gladys Evelyn	Palo Alto	Span. 18	335 Webster-p
Brown, James Pomeroy	Portland, Ore.	Chem. 69	428 Encina
Brown, Lorraine Leonore	San Diego	Engl. 150	Sigma Kappa
Brown Margaret Wallace	San Francisco	Econ. 60	1200 Emerson
[2]Brown, Marian Frances	Los Angeles	Math.	Madrono
Brown, Mary Ethel	Palo Alto	Hist. 79	Sigma Kappa
[1]Brun, Otis Gorham	San Francisco	Law 173	Kappa Sigma
[2]Bryan, Darwin	Suisun	Geol. 15	Phi Kappa Psi
[2]Bryan, Miriam A.	Napa	Sc. Ed. gr.	Pi Beta Phi
A. B., Stanford, 1915.			
Bryant, Marjorie Stowell	San Jose	Econ. 40	6 Roble
[1]Bryner, George Elm	Pasadena	Geol. 12	20 Salvatierra
Buchanan, Mowry Stuart	Lindsay	Econ. 59	1004 Emerson-p
[1]Buckham, Stafford	Los Angeles	Span. ‡	52 Encina
Buckles, Emmett Joseph	Palo Alto	Educ. gr.	533 Ramona-p
A. B., Stanford, 1917.			
Bucklin, James W., Jr.	Grand Junction, Col.	PreL. 52	425 Florence-p
[1]Buffum, Harry Austin	Long Beach	Law 144	Delta Chi
Buffum, Thurlyne	Long Beach	Fr. 123	Pi Beta Phi
Bulkley, Milton	Oakland	M. E. 58	Alpha Delta Phi
Bullis, Richard Omri	Los Angeles	Phyl.-Med. 148	Beta Theta Pi
Bunds, Clifford Courtney	Santa Clara	Chem. 62	1390 St. Clara, SC-sc
Bunds, Lester Archie	Santa Clara	Chem. 62	1390 St. Clara, SC-sc
[1]Burbank, Eleanor	San Francisco	Phyl. ‡12	Roble
[2]Burbank, Wm. Freeman	San Francisco	Law gr.	559 Encina
A. B., Stanford, 1916.			
Burbridge, Charles Clair	Manchester, Ia	C. E. 12	146 Pope-p
[2]Burke, Charles Victor	Palo Alto	Bact. gr.	603 Lytton-p
A. B., Stanford, 1907, A. M., 1908, Ph. D., 1912.			
Burke, Helen M.	Los Angeles	Fr. 53	Alpha Phi
Burks, Jesse	Venice	Geol. 12	Alpha Tau Omega
Burns, Charles	San Jose	Hist. gr.	Coll. of Pac., SJ-sj
A. B., College of the Pacific, 1916.			
Burrell, Chester Alton	San Jose	M. E. 103	196 S. 8, SJ-sj
Burrill, William V., Jr.	Tacoma, Wn	Chem. 51	Zeta Psi
[1]Burton, Margaret Florence	Los Angeles	Hist. 57	Gamma Phi Beta
Butt, Dale Joseph	Newberg, Ore.	Phyl. 100	Phi Delta Theta
[2]Butt, Jane H.	Viroqua, Wis.	Educ. gr.	Alvarado Hall
A. B., Wisconsin, 1910.			
[1]Byrd, Clarence M.	Salem, Ore.	Law gr.	El Camino
A. B., Olivet, 1915.			

Cadle, Austin	Sacramento	M. E. 16	Phi Kappa Psi
Cahn, Monroe Leopold	San Francisco	Econ. 52	116 Encina
Calderwood, Ada Imogene	Palo Alto	Ed. G. A. 148	531 Cowper-p
Caldwell, David Lyman	San Mateo	Chem.65	152Ellsw'th,SM-sm
Calhoun, Ellen Mein	Seattle, Wn.	Engl. 59	KappaAlphaTheta
Campbell, Harry Archibald	Santa Cruz	Geol. 115	Encina
Campbell, Howard Franklin	Modesto	Geol. 7	232 Encina
Campbell, Jean	San Francisco	Hist. 148	KappaAlphaTheta
Campbell, Leon George	Pasadena	Phyl. Med. 190	Zeta Psi
Canelo, Harry Fernand	San Jose	Econ. 11	150 Reed,SJ-sj
Carballo,ErnestoJalandoni	Jaro,Iloilo,P.I.	Phyl. ‡11	29 Salvatierra
Carbee, Gwin Wilbur A. B., Stanford, 1918.	Los Angeles	C. E. gr.	324 Encina
Card, Marjorie Frederica	Palo Alto	Phyl. 124	966 Addison-p
Card, Thomas Adam A. B., Stanford, 1915.	Palo Alto	Med.gr.	S.F.Hospital,SF-sf
Carey, Evelyn Marie	Palo Alto	Lat. 12	361 Lytton-p
Carey, Thomas Sheridan A. B., Stanford, 1917.	Los Angeles	Med.gr.	2321 Sac'to,SF-sf
Carlisle, Charles Frederick	Chicago, Ill.	Econ.58	SigmaAlphaEpsilon
Carlisle, Thelma	Los Angeles	Engl. 59	Roble
Carlsmith, Leonard Eldon	Hilo, T. H.	Chem. 11	251 Encina
[1]Carlson, Everett	Marshfield, Ore.	Phyl. Med. ‡15	5 Cabrillo
Carmichael, Jacob	San Jose	Hist.13	312W.SanF'r'do,SJ-sj
[1]Carr, John Edwin	Porterville	PreL. 51	Delta Chi
Carter,DonaldBidwell	Glastonbury,Conn.	M. E. 13	Alpha Sigma Phi
Carter, Jessie Marie	Pasadena	Zool. 143	Sigma Kappa
Carter, Philip Staats	Glastonbury, Conn.	M. E. 192	Alpha Sigma Phi
Carter,ThomasWilburn	TwinFalls,Ida.	Econ. 15	336 Encina
[2]Carver, Ralph Langhenry	Los Angeles	Pre L. 46	Delta Upsilon
Cary, James Alison	Mandan, N. D.	Chem. 13	Theta Xi
Cary, William Sayre	Mandan, N. D.	Chem. 9	Theta Xi
Casebeer, Lloyd	Los Angeles	Ger. 147	Phi Kappa Psi
[1]Cash,Harold Cheney	Chattanooga,Tenn.	Phil. 147	Theta Delta Chi
Castleman,Gordon L.	SaltLakeCity,Utah	Econ. 11	Phi Kappa Sigma
Casto, Isabel Bottler	Portland, Ore.	Math. 75	Alvarado Hall
Cattell, Anna Ashburner	Stanford Univ.	Hist. 163	Kingscote Apts.
Cattell, Dorothy	Stanford Univ.	Span. 13	Kingscote Apts.
Cattern, Marymae McClain	S. Pasadena	Hist. 60	Gamma Phi Beta
[1]Cattern, Newton Eugene	S. Pasadena	Econ.40	DeltaKappaEpsilon
Caughey, Beatrice	Ukiah	Econ. 15	Madrono
Cerruti, Edvige Mary	Los Gatos	Span. 13	80 Fairview,LG-lg

[1]Chambers, George Robert, Jr.	Berkeley	Econ. 108	El Camino
[1]Chamorro,FerdinandAlex.	Granada,Nic.	Geol. sp.	Phi Kappa Psi
Chan, Clarence Kuhn	San Francisco	C. E. ‡10	405 Emerson-p
[1]Chandler, Clyde Emmett	San Francisco	M. E. sp. 4	Kappa Alpha
Chandler, Constance	Hollywood	Engl. 143	AlphaOmicronPi
Chandler, Fitz-Mac	San Francisco	Econ. 38	Kappa Alpha
[1]Chandler, Loren Roscoe	Fresno	Bact.-Med. 151	Zeta Psi
Chandler, Ruth	Hollywood	Hist. 105	AlphaOmicronPi
Chang, Wei Ju	Tientsin, China	Chem. 101	405 Emerson-p
[1]Chapman, Charles McDowell	SantaRosa	Hist. 132	445 Encina
Chapman, Lawrence L.	SantaRosa	Hist.147	R.F.D.1,Redwood-r
[1]Chapman,WayneChester	Pendleton,Ore.	Law 76	SigmaAlphaEpsilon
Chappelear, Monroe	Palo Alto	M. E. 68	451 Addison-p
Chase, Jessie M.	Los Angeles	Engl. 96	Cooksey Lane
[2]Cheesborough,EstherStone	Galv'n,Tx.	Engl.	19 Salvatierra
Cheesborough,Floride N.	Galveston,Tex.	Econ. 103	19 Salvatierra
[2]Childress, Henry Harrison	San Jose	Pre L. 34	14 Encina
Christiansen,Elizabeth B.	San Francisco	Med. gr.	2059 Bush,SF-sf
A. B., California, 1915.			
[1]Cilley, Herbert Arthur	Long Beach	Phyl.	310 Encina
[1]Clark, Cora Bowen	San Francisco	Hist. gr.	798 Post, SF-sf
A. B., Stanford, 1917.			
Clark, Ellen Eveline	Pasadena	Math. 107	GammaPhiBeta
[2]Clark, Esther Bridgman	Stanford Univ.	Zool.	4 Cabrillo
Clark,Frances Naomi	San Jose	Zool. 153	55 Roble
Clark, Helen Virginia	Stanford Univ.	Fr. 157	7 Alvarado
Clark, Henry Russell	Los Angeles	Geol. 113	404 Encina
Clark, Philip Corriston	Stanford Univ.	M. E. 12	7 Alvarado
Clark, Wilfred Sterling	Ventura	Chem. 13	Phi Kappa Sigma
Classen, Willard John	Atherton	Chem. 5	Menlo Park-mp
Clattenburg, Herbert A.	Eureka	Med. gr.	2102 Calif.,SF-sf
A. B., Stanford, 1915.			
Clift, Grace Seybert	San Francisco	Span. 51	14 Madrono
Cloud, George Hurach	Fresno	Hist. 107	521 Encina
Cluff, Geraldine Marion	San Francisco	Hist. 151	KappaAlphaTheta
[1]Cluff, Gladys Briggs	Menlo Park	Engl. 159	Menlo Park-mp
Coates, Eldred Arthur	Los Gatos	Geol. ‡9	117 Encina
Cobb, Helen	Woodland	Span. 13	48 Roble
Coblentz, Herbert Cerf	Stockton	Econ. 15	564 Encina
Cochrane, Victor Stronsom	Fresno	Econ. 5	DeltaKappaEpsilon
[1]Cochrane, William Roy	San Francisco	Law 93	Zeta Psi
Cody, Bernard Anthony	Long Beach	Zool. 11	231 Encina

Coffin, Thelma Ruth	Reno, Nev.	Psych. 53	Delta Delta Delta
Coggeshall, Howard Edward	Pasadena	Econ. 11	Phi Delta Theta
[1]Coil, Marjorie Kathryn	Woodland	Engl. 61	Alpha Omicron Pi
Cokely, Leon Howard A. B., Stanford, 1918.	Coalinga	C. E. gr	244 Encina
Coleman, Alfred H., Jr.	Tacoma, Wn.	Geol. 157	Delta Upsilon
Colglazier, Flavis Karl	Tucson, Ariz.	Econ. 58	AlphaTauOmega
[1]Coll, Dan	Reno, Nev.	Phyl.-Med. ‡8	210 Encina
Collins,ClareBradford	Crookston,Minn.	Phil. 15	324 Emerson-p
Collins,Walter W.	Dawson,Y.T.,Can.	M. E. 118	227 Encina
Combs,William Hooper	Los Angeles	Law 100	Beta Theta Pi
Compton, Anita Margaret	Palo Alto	Ed.-G. A. 56	437 Bryant-p
Conard, Fidelia Elizabeth	San Diego	Fr. 62	Pi Beta Phi
Conard, Horace Milton	San Diego	Econ. 163	Delta Chi
Condee, Newcomb	Los Angeles	PreL. 72	428 Encina
[2]Connolly,Washington Lewis	Van Nuys	Econ.	660 Waverley-p
Considine,JohnWilliam,Jr.	Seattle,Wn.	Phyl. 62	Delta Tau Delta
[1]Cook, Charles Franklin A. B., Stanford, 1916.	Long Beach	Law gr.	233 Encina
Cook,LawrenceHarvey	Ketchikan,Alaska	Chem. ‡10	225 Encina
Cooley, Philip Harmachis	Palo Alto	Hist. 152	861 Channing-p
Coonse,GeorgeKenneth	N.Yakima,Wn.	Phyl. 50	Delta Kappa Epsilon
Cooper, Harold John A. B., Stanford, 1917.	San Francisco	Med. gr.	Beta Theta Pi
Cooper, John Alfred A. B., Stanford, 1916.	Woodland	Med.gr.	2018Webster,SF-sf
Cooper, Mary Ashton	Portland, Ore.	Econ. 10	Gamma Phi Beta
Corey, Pearl Johnson	Palo Alto	Fr. 67	909 University-p
Cornejo, Alfonso University of Leipzig.	Palo Alto	Chem. gr.	405 Kipling
[1]Cornejo, Antonio	Palo Alto	M. E. sp.	201 Pope-p
[2]Costello, Evelyn Jeannette	Los Angeles	Econ. ‡	7 Salvatierra
[2]Cota, Florencio M.	Jerome, Ariz.	M. E.	12 Encina
[1]Couch, Howard Hunt	Lindsay	M. E. 54	45 Encina
[1]Council,ClarenceBloomfield	S.Pasadena	Law 134	Phi Gamma Delta
[1]Courchesne,CharlesAlbert	ElPaso,Tex.	Fr. 16	Kingscote Apts.
Couture,CarrollRichardson	EastAuburn	Law ‡16	306 Encina
Covey, Earl Leon	Napa	Econ. 53	14 Encina
Cowan, Clarence Bert	Fresno	Phyl. 109	Chi Psi
Cowdery, Karl Montague A. B., Oberlin, 1915.	Whittier	Educ. gr.	44 Encina
Cowell, Ray Theodore	Palo Alto	Engl. 15	930-Scott-p

Cowgill, Frank Hubert	Covina	Engl. 60	Alpha Sigma Phi
Crabtree, E. Katherine	Los Angeles	Ger. 150	22 Roble
[1]Crabtree, Harriet Gregory	San Diego	Hist. ‡	Pi Beta Phi
Crabtree, Rebekah Taylor	San Diego	Ger. 149	Pi Beta Phi
Craig, Harold Carter	Willows	M. E. 13	Encina
[2]Craig, Harold Edward	Cheney, Wn.	Educ. ‡	39 Encina
[1]Crandal, Jesse Robert A. B., Stanford, 1918.	Palo Alto	Educ. 180	225 Homer-p
Crane, Carlton Cyrus, Jr.	San Jose	Hist. 13	165 S.16th,SJ-sj
[2]Crawford,GeorgeWilliam	Hoquiam,Wn.	Phyl.	Encina
Crim, Georgia Estelle A. B., Stanford, 1917.	San Francisco	Sc. Ed. gr.	Alvarado Hall
Criss, Vernon Eslie	Fields Landing	M. E. 3	Manzanita Hall-p
[1]Crobaugh, Maizie Roberts	San Jose	Econ.	99 N. 5th, SJ-sj
[2]Crook, Welton Joseph A. B., Stanford, 1911.	Stanford Univ.	Geol. gr.	22 Lasuen
Crosby, Carlisle Cameron	Hayward	Law 93	Kappa Sigma
Cross, Helen Angeline	Merced	Engl.151	KappaKappaGamma
Crouch, Kenneth Wilfred	Santa Ana	C. E. 58	Theta Xi
[1]Crowe, Alice Mary	Long Beach	Econ. 62	Pi Beta Phi
Crowe, Earle Edward	Porterville	Econ. 8	Delta Tau Delta
[1]Crowe, Harold Enos A. B., Stanford, 1917.	Long Beach	Med. gr.	13 Salvatierra
Crowe, Mary Eva Wood	Tulare	Hist. 15	11 Madrono
[1]Crowley, Dennis J. H. A. B., California, 1917.	Port Costa	Sc. Ed. gr.	Encina
Cruttenden, Elsie Bailey B. S., Simmons, 1916.	Stanford Univ.	Engl. gr.	19 Madrono
Cuddy, John Martin	Tonopah, Nev.	Hist. 16	302 Encina
Culbertson,EdwardAlexander	Pasadena	C. E. 10	Beta Theta Pi
Culp, Winifred A. B., Stanford, 1917.	Escondido	Chem. gr.	25 Roble
Cumming, Joseph Allen	Watsonville	Econ. 8	Phi Kappa Psi
Cundall, Roland Lewis	Alameda	Chem. 14	418 Encina
Curtice, Aubrey Arthur	Spokane, Wn.	Geol. 109	Delta Upsilon
[1]Curtner,WilliamWeller A. B., Stanford, 1916, A. M., 1916.	WarmSprings	Zool. gr.	351-Encina
Cushman, Ruth	Palo Alto	Econ. 13	565 Everett-p
Dale, Helen Lois	Mayfield	Bot. 14	Mayfield-p
Daley, Helen Hunt	Cheyenne, Wyo.	Lat. 15	46 Roble
Dalgleish, Ross Ian	Kamloops, B. C.	Econ. 75	Sigma Chi
Daniells, Alva A.	Lindsay	Econ. 106	Theta Xi
Darling, Herbert H.,Jr.	Brookline,Mass.	M. E. 12	Alpha Delta Phi

Davidson, Marian Kirk	Alhambra	Lat. 146	Pi Beta Phi
[1]Davis, A. Eugenia	Woodland	Span. 8	Roble
Davis, Barber Ferdinand	Spokane, Wn.	Law 152	Alpha Delta Phi
Davis, Cachot Stephen	San Francisco	Econ. 61	Phi Kappa Psi
[2]Davis, Corinne	Lindsay	Educ. ‡	340E.S.Fe'rndo,SJ-sj
Davis, Eugene Lewyn	Santa Maria	Chem. 60	422 Encina
Davis, Frank Shepherd	Palo Alto	Phyl. 17	Runnymede-p
Davis, Harold Jackson	Palo Alto	Psych. ‡13	Runnymede-p
Davis, Hester Ruth	Palo Alto	Span. 17	832 Kipling-p
[1]Davis, Lavoy Henry	Tonopah, Nev.	Law ‡61	106 Encina
[1]Davis, Oscar C.	Mayfield	Law ‡	Mayfield-m
Davis, Samuel Keith	Santa Ana	Hist. 57	114 Encina
Davis, Wallace Merle	Portland, Ore.	Hist. 14	Sigma Chi
Davy, Donald Gordon A. B., Stanford, 1915.	San Jose	Med. gr.	2018Webster,SF-sf
Debenham, Martin	San Francisco	M. E. 50	118 Encina
DeBerry, Mary Ruth	Anaheim	Span. 106	53 Roble
Dechman, Dwight A.	San Jose	Geol. 11	766 Hedding, SJ-sj
DeGolyer, Joseph Baldwin, Jr.	Lincoln	Econ. 13	El Camino
DeLancey, Chester Arthur A. B., California, 1916.	Oakland	Med. gr.	625 Syc.,Oakland-o
[1]Delkin, James Ladd	Seattle, Wn.	Hist. ‡	357 Encina
[2]Demond, Earle Frank	Los Angeles	Chem.	Encina
DeMund, Herman Edwin	Los Angeles	Econ. 111	Kappa Sigma
Denhart, Vivian Christina	San Jose	Zool. ‡	Roble
[1]Dennie,BenjaminFranklin	LongBeach	C. E. 125	Kappa Alpha
Desmond, Harold Francis A. B., Stanford, 1917.	Los Angeles	Hist. gr.	718 Bryant-p
[1]Devereux,RobertColeman	SanFrancisco	Geol. 8	Kappa Alpha
Devlin, Arthur Coghlan	Sacramento	PreL. ‡15	DeltaKappaEpsilon
Dewey, Geraldine Dacia	Nampa, Ida.	Law 90	Alpha Phi
[2]Dickey, Frank Fletcher	San Francisco	M. E. 169	Zeta Psi
Dickey, Henrietta Junkin	Westminster	Engl. 62	DeltaDeltaDelta
[1]Dickey, Sanford Marrian, Jr.	Isleton	Econ. 5	SigmaAlphaEpsilon
[1]Dickinson, William George	LosAngeles	Law 138	Delta Tau Delta
Dickson, Virgil Everett A. B., Washington State College, 1908;	Berkeley	Educ.gr. A. M., Stanford, 1917.	2208Dw'tWy,Bkly-b
Dinapoli, Domenick	San Jose	M.E.65	262CurtnerAve.,SJ-sj
Dinkelspiel,LloydWilliam	SanFrancisco	PreL. 72	500 Encina
Dinsdale, Merle Vere	Woodland	Hist. 150	60 Roble
[1]Dixon, James Leroy A. B., Stanford, 1899.	Palo Alto	Latin gr.	430 Kipling-p

Dixon, Robert James	San Jose	Phyl.-Med.156	34Mag.,SJ-sj
[2]Dobbel, Charles Arthur	Palo Alto	Geol.	640 Forest-p
Dobbs, Walter Vincent	Flandreau,S.D.	Econ.‡3	Encina
Doble, Warren	San Francisco	M. E. 42	Stanford Park
Dodds, Lauren Humphrey	Palo Alto	C. E. 79	Delta Upsilon
Doe, Charles Webster, Jr.	San Francisco	PreL. 37	Beta Theta Pi
Dolbow, Vera Margaret	Palo Alto	Educ. 56	900 Waverley-p
Donaldson, Dorothy Ellen	Palo Alto	Span. 13	737 Webster-p
Donaldson, Melvin Smith	S. Pasadena	Chem. ‡96	Theta Xi
Donnel, Harold G.	Rawlins, Wyo.	Engl. 121	544 Everett-p
Donnell, Wilma Grace	The Dalles, Ore.	Bact. ‡8	Alvarado Hall
Doolan, Jerome Kaseberg	San Francisco	C. E. ‡35	435 Encina
Doolittle, Charles Wallace	Denver,Colo.	Econ. 48	Sigma Chi
[1]Dorland, Robert Elmore	San Diego	Phys. 16	Chi Psi
Doron, Joseph Smith	Phoenix, Ariz.	Chem. 114	Theta Xi
Douglas, Clyde Otis	Douglas, Ariz.	M. E. 11	527 Encina
[2]Douglas, Helen Frances	Marysville	Math.	Roble
Downs, Kenneth Hurley	Tehachapi	C. E. 54	322 Encina
Doyle, Melvin Edward	Riverside	Econ. 10	113 Encina
[1]Draper, Guy	Arroyo Grande	Chem. 73	Encina
Draper, Roscal Leroy A. B., Stanford, 1913.	Arroyo Grande	Med. gr.	SanFran.Hosp.SF-sf
[2]Drew, Reginald Eastman	Palo Alto	Bot.	1321 Waverley-p
Driscoll, Dorothy Catherine	Pasadena	Engl.62	KappaKappaGamma
Driscoll,JohnGerald,Jr.	SanLuisObispo	Law 110	375LittleKingsley-p
Drury, Douglas Richard	Victoria, B.C.	Chem.-Med. 147	17 Encina
Dubendorf, John Hayes	Palo Alto	M. E. 123	801 Waverley-p
DuBois, Robert Huston	Vancouver,Wn.	M. E. 13	123 Encina
Dumpit,JoseOrtiz	Banang,LaUnion,P.I.	Phyl. 66	14 Alvarado
Duncan, Flora MacRae	Palo Alto	Greek 67	1001ForestCourt-p
[1]Duncan, John A.	Yuba City	Med. ‡	S.F.Hospital,SF-sf
Duncan, Robert Fyfe Mein	Palo Alto	Geol. 31	1001ForestCourt-p
Dungan, Donald Kembel	Denver, Colo.	M. E. 115	330 Encina
Dunker, Chrysella	Palo Alto	Span. 14	755 University-p
[1]Dunlap,RichardLafayette	Tonopah,Nev.	Econ. ‡10	Phi Kappa Psi
Dunn, Chauncey Homer, Jr.	Sacramento	Law 108	Phi Gamma Delta
Dunn, Elizabeth Manwell	San Francisco	Econ. 66	80 Roble
Dunn, William Wyly	Phoenix, Ariz.	Econ. 5	249 Encina
[1]Dunnell,Leo Cornelus	Cordelia	PreL. 81	32 Encina
Dunshee, Herva Consuelo	Palo Alto	Ed.-G.A.129	734Waverley-p
Durtschi, Ruby	Wood River, Neb.	Bact. 82	Alvarado Hall

Duryea, Anne	Palo Alto	Engl. 148	Roble
Duryea, Philip Taylor	Palo Alto	Geol. 57	308 Lincoln-p
[1]Dykeman, W. Jerome	Carmel, N. Y.	Econ. 97	538 Encina
Dysinger, Earl Scott A. B., Stanford, 1917.	Palo Alto	Econ. gr.	824 Bryant-p
[1]Dysinger, Marjorie Bishop A. B., Stanford, 1917.	Palo Alto	Engl. gr.	824 Bryant-p
Eaton, Dorothy	Palo Alto	Phil. 150	431 University-p
[1]Eckhart, Charles W.	Los Angeles	Span. 97	43 Encina
Eckhart, George Boland	Los Angeles	Econ. 105	Phi Kappa Psi
Eddelman, William Smiley, Jr.	Martinez	Geol. 13	438 Encina
Edgar, Hazel Beatrice	Imperial	Educ. 100	Delta Gamma
Edwards, Eunice Irene	Forsyth, Mont.	Econ. 150	Kingscote Apts.
Edwards, Muriel Emma	Wallace, Ida.	Econ. 35	69 Roble
[2]Edwards, Persis	Berkeley	Hist. ‡	Gamma Phi Beta
Egami, Hubert Eziro	Visalia	M. E. 66	Japanese Club
Eiskamp, Ehler Henery	Palo Alto	Bact.-Med. 165	446 Forest-p
Eiskamp, Marguerite	Palo Alto	Ger. 81	446 Forest-p
[2]Elden, John Francis, Jr. A. B., Stanford, 1916.	Los Angeles	Law gr.	828 Guinda
[1]Eldredge, Lois	San Francisco	Chem. 93	83 Roble
Elfving, Isabel Dorothy	San Mateo	Fr. 15	25 2nd ave., SM-sm
[2]Ellen, Donna Belle	Berkeley	Econ. ‡	KappaKappaGamma
Elliott, David Coit	Stanford Univ.	Econ. 156	5 Cabrillo
[1]Elliott, Elizabeth	Pasadena	Econ. 52	Kappa Alpha Theta
[1]Elliott, Jean	Palo Alto	Engl. 38	559 Kingsley-p
[1]Elliott, Wallace Fordham	Oakland	Econ. 13	409 Encina
Ellis, Leland Wadsworth A. B., Stanford, 1917.	Bakersfield	Med. gr.	El Camino
Ells, Harry Arthur	Bellingham, Wn.	Chem. 12	Alpha Tau Omega
Elsey, Caryl Lucile	Palo Alto	Fr. 15	637 Gilman-p
Elsey, Howard McKee A. B., Stanford, 1914, A. M., 1915.	Palo Alto	Chem. gr.	734 Middlefield-p
Elsinger, Ruth Maxine	Glendora	Fr. 60	88 Roble
[1]Emerson, Ethel Eunice A. B., Stanford, 1917.	Mountain View	Sc. Ed. gr.	55 Roble
Endres, Herbert Arthur	Los Angeles	Chem. 106	406 Encina
Enenkel, William A. A. B., Southern California, 1917.	Palo Alto	Fr. gr.	Encina
English, Floyd Everett A. B., Stanford, 1917.	Cupertino	Law gr.	539 Encina
Epler, Myron Cleary	Hanford	Econ. 11	Zeta Psi
Eppich, Elinor Marie	Denver, Colo.	Econ. 113	34 Roble

Erickson, Arthur Samuel	Los Altos	Hist. sp. 152	Los Altos-la
Erickson, Paul Ferdinand	Kingsburg	Econ. 15	209 Encina
Esgen, Weinand Kelly	Los Angeles	M. E. 56	Alpha Tau Omega
Estcourt, Doris Elfrida A. B., Stanford, 1917.	Berkeley	Engl. gr.	252 Kingsley
Eubank, Grace Elizabeth	Wilmington	Engl.152	KappaKappaGamma
Eubanks, Ruth Marie	Alameda	Span. 61	Alpha Phi
Evans, Mark H.	MintoBridge,Y.T.,Can.	Geol. sp. 10	402 Encina
Evans, Samuel, Jr.	Oak Park, Ill.	M. E. 145	Alpha Tau Omega
[2]Evenson,WillardTaylor A. B., Stanford, 1917.	Clatskanie,Ore.	Law gr.	270 Kellogg-p
Eyer, Clarendon Bennett, Jr.	LosAngeles	Chem. 47	Phi Gamma Delta
Fabling, Florence Maude	Denver, Colo.	Hist. 58	Gamma Phi Beta
Fablinger, James Brown, Jr.	Campbell	Econ. 14	45 Encina
Fairchild, Donald Raymond	Palo Alto	Ger. 15	418 Ramona-p
Fairfield, John Edmund	Ames, Ia.	Econ. 15	561 Encina
Faitoute, Alice Everts	Visalia	Psych. 57	43 Roble
Falk, Oliver Stedman	Eureka	Phyl. 11	Delta Upsilon
Fancher, Charles Rousseau A. B., Stanford, 1917.	Modesto	Med. gr.	446 Encina
Farnsworth, George Willis	Porterville	Econ. 42	Delta Chi
Fast, Lisette Emery	Denver, Colo.	Engl. 117	33 Roble
Fearing, Franklin Smith	Seattle,Wn.	Psych. sp. 64	545 Forest-p
Fearney, Emily Esther	Los Angeles	Engl. ‡14	34 Roble
Fenlason, Clayton Orin	Portland, Ore.	Law 113	424 Encina
Ferris, Wallace Fields	San Diego	Econ. 15	105 Encina
Fesler, Rachel	Duluth, Minn.	Hist. 154	545 Kingsley
Fesler, Ruth	Duluth, Minn.	Hist. 150	545 Kingsley
Filley, Edward Prior	S. Pasadena	Zool. 14	Zeta Psi
Finfrock, Amy Sheldon A. B., Park College, 1913.	Mountain View	Hist. gr.	Mountain View-mv
Finley, Mark Hanna	Los Angeles	FreL. 62	DeltaKappaEpsilon
Finney, Clara Eugenia A. B., Stanford, 1906.	Modesto	Med. gr.	2402 Calif.,SF-sf
Finney, Mabel Consuelo A. B., Stanford, 1914.	Modesto	Med. gr.	2402 Calif , SF-sf
Fish, Lounsbury S.	Palo Alto	C. E. 15	1101 Emerson-p
[2]Fisher, Prudence Hale	Palo Alto	Hist. 84	875 University-p
Fisher, Wilfred Balliet	Palo Alto	Econ. 150	327 Hamilton-p
Fleming, Forest Elroy, Jr.	Los Angeles	Phyl. 8	Phi Gamma Delta
Fleming, James Douglas	SanBernardino	C. E. 170	Phi Gamma Delta
Flett, Beatrice Vesta	Palo Alto	Engl. ‡15	1511 Waverley-p

[1]Flint, John Donovan A. B., Stanford, 1916, J. D., 1918.	Palo Alto	Law gr.	841 Bryant-p
[2]Flint, Margaret Natalie	Palo Alto	Educ.	841 Bryant-p
Flippen, Virginia Parker	Orange	Phyl. ‡16	Alpha Omicron Pi
[2]Floete, Carl Elmore	Menlo Park	Econ. 88	Menlo Park-mp
Flood, Randolph Gove	San Francisco	Phyl.-Med.154	PhiDeltaTheta
[1]Flood, Thomas Bernard A. B., Stanford, 1918.	Tonopah, Nev.	C. E. 180	309 Encina
Footman, Gladys Blanche	Madera	Hist. 82	Menlo Park-mp
Ford, Nell Elizabeth A. B., Stanford, 1910, A. M., 1911.	Oakland	Med. gr.	2321 Sac'to,SF-sf
[2]Fortson, Gordon Russell A. B., Washington and Lee, 1910.	Homer, La.	Med. gr.	Encina
[1]Foster,GilbertBranscombe	Spokane,Wn.	Engl. 13	Alpha Delta Phi
Foster,Sue Anne	Palo Alto	Ger. 57	381 Lincoln-p
Fowler, John Shively	Redwood City	Geol. 131	434 Encina
Franck, Thomas George	Spokane, Wn.	Econ. 13	Phi Gamma Delta
Frankenfield, Lorraine	Los Angeles	Econ. 105	73 Roble
Frankenheimer, Bernice	Stockton	Engl. 53	12 Roble
Franklin, Anna Comstock	Palo Alto	Phyl. 60	Mirada ave.
[2]Franklin, Walter K.	San Bernardino	M. E.	El Camino
[2]Frasier, George Willard A. B., Michigan State Normal College, 1916.	Marlette, Mich.	Educ. gr.	Palo Alto
Freeman, Edwin Robert	Corona	Hist. 14	El Camino
Frickelton, Jean Scott	Palo Alto	Engl. 37	Chi Omega
Fritzschen, H. Wilhelm	San Francisco	Phyl. sp. 62	718 Bryant-p
[1]Frolli, Winfred Romeo	Palo Alto	Hist. ‡16	410 Lytton-p
[1]Frye, Henry Abraham A. B., Stanford, 1917.	Berkeley	Hist.gr.	Xazmin House
Fujii, Edward Ryuichi	Nagato, Japan	Chem. ‡6	Japanese Club
Fujimoto, Tadao	San Francisco	Econ. 13	8 Dolores
Fuller, Leonard Franklin M. E., Cornell, 1912.	Palo Alto	E. E. gr.	1357 Cowper-p
Fullerton, Edith Ralston	San Mateo	Hist. 52	Delta Gamma
[1]Fundenberg, William C.	Pasadena	PreL. 95	Alvarado Club
[1]Funke, Hall Baum	Alameda	M. E. ‡	Encina
Furui, Shungo	Selma	M. E. 63	Japanese Club
Fybush, Irma Theodora	Los Angeles	Ger. 153	35 Roble
Gaffney, John Wyman	Los Angeles	Econ. 56	Stanford Union
Gagos, Kenneth A.	Fresno	Chem. 11	567 Melville-p
Gailfus, Lorna Margaret	Modesto	Lat. 155	Pi Beta Phi
Gallegos, Percy Beals	Palo Alto	Phyl. 69	835 Lytton-p

[1]Galliano, Frank James	Oakland	Law 141	445 Encina
Galloway, Hugh Carnegie	Los Angeles	Chem. 28	Zeta Psi
Gangestad, Roy Sylvester	Los Angeles	Law 155	DeltaKappaEpsilon
Gansert, William Iles	Rock Island, Ill.	Law 154	11 Salvatierra
Gardner, Anna Margaret	Whittier	Hist. ‡15	21 Madrono
Gardner, Marion	Los Angeles	Econ. 9	8 Madrono
Garland, Ruth	Ojai	Bact. 61	Delta Gamma
Garsed, Gwendolen Harriet	Palo Alto	Engl. 148	345 Hamilton-p
Garvin, Lenell Ethlyn	Los Angeles	Lat. 102	Alpha Omicron Pi
[1]Gavin, Dorothy Elizabeth	San Diego	Engl. 55	Pi Beta Phi
Gazlay, Frank Andrews	San Diego	Law 177	Kappa Alpha
von Geldern, Hans	San Francisco	Med.gr.	1724Broadway,SF-sf
A. B., Stanford, 1913, M. D., 1913.			
[1]Gentry, Harold Goodman	Redlands	Phyl. ‡	49 Encina
[1]Gentry, Ira Howard	Cottonwood, Ida.	Law 90	El Camino
George, Arthur Tolover	San Jose	Econ. 60	Delta Chi
[1]Gerken, Elon Edward	Morgan Hill	Econ. 62	410 Lytton-p
Ghrist, David Garrison	Ames, Ia.	Econ. 63	Beta Theta Pi
[2]Ghrist, Orrie E.	Ames, Ia.	Med. gr.	Beta Theta Pi
A. B., Stanford, 1917.			
[1]Gianelli, Rudolph Leonard	Stockton	Law gr.	Delta Tau Delta
A. B., California, 1917.			
Gianini, Leo Gregory	San Francisco	M. E. 13	226 Encina
Gibbs, Chester William	Orcutt	Chem. 60	422 Encina
Gibbs, Doris Jean	Pasadena	Engl.103	KappaKappaGamma
Gifford, Myrnie Ada	Randolph, Vt.	Med. gr.	1040 Bush,SF-sf
A. B., Mount Holyoke, 1915.			
Gilbert Marion	Los Angeles	Hist. 155	Alpha Omricon Pi
Gilbert, Warren Kilpatrick	Los Angeles	PreL. 59	Delta Upsilon
Gilbertson, I. Sherman	Towner, N. D.	Econ. 149	504 Encina
[1]Gilchrist, Margaret Josephine	San Jose	Engl. gr.	460 N. 3d SJ-sj
A. B., Stanford, 1915.			
Gilchriste, Aida Christine	San Mateo	Engl. 120	Gamma Phi Beta
Gilchriste, Ellis Barr	San Mateo	Econ. 9	105 Tilton, SM-sm
Gilkey, Wallace Alfred	Burley, Ida.	Chem. 11	536 Lincoln-p
Gillett, Eugene Carichoff	Carmel	Chem. 9	Theta Delta Chi
Gillett, Lorenzo Rowe	Sterling, Colo.	Econ. 166	Stanford Union
Gillis, Lindsay	Los Angeles	Geol. 7	Delta Kappa Epsilon
Gilroy, Urban Burns	Marysville	C.E. 13	21 Salvatierra
Gilroy, William	Santa Monica	Law 181	Chi Psi
Girard, Adolph Gustav	San Francisco	M. E. 14	446 Ruthven-p
Gladding, Albert Chandler	Lincoln	Econ. 13	Phi Kappa Sigma

Glikbarg, Abner Sam	Oakland	Law 98	245 Encina
[2]Goddard, Philip H.	Long Beach	Econ.	Alpha Sigma Phi
Godfrey, Darwin F.	Los Gatos	Econ. 10	117 Encina
[1]Goetjen,FloydLeslie	Dawson,Y.T.,Can.	Chem. 87	417 Encina
GoldbergHaroldSolomon	Phoenix,Ariz.	Econ. 116	204 Encina
[1]Goldschmidt,Walter N.	Stanford Univ.	Econ. ‡	14 Salvatierra
[1]Goldstein, Edgar Louis	San Francisco	Econ. 3	405 Encina
[1]Goldstein, Joseph	Sacramento	Eact.-Med. 150	427 Encina
[1]Goodman, Byron M.	Forest Grove,Ore.	C.E. 146	349 Encina
Goold, John Vernon	Morgan Hill	Phyl. 35	318 Lytton-p
Goss, Elizabeth Laird	Ontario	Engl. 117	Alvarado Hall
Goss, Pierre Bontecou	Sheridan	Econ. 11	Stanford Union
Gottschalk, Frank C.	Willows	Econ. 11	334 Lincoln
Gould,Howard Francis	Fairmont,Minn.	Econ. 15	553 Encina
Graham, Ruth	Los Angeles	Lat. 166	Delta Gamma
Grandy, Willis Irving	Bakersfield	Econ. 13	Theta Xi
Graves, Adelaide Dorothy	Bostonia	Span. 15	Kingscote Apts.
Graves, John Maddux A. B., Stanford, 1916.	San Francisco	Med. gr.	34 Hill, SF-sf
Gray, Derby Judson	Salt Lake City,Utah	Econ. 13	Alpha Sigma Phi
Green, Faith Amy	Pasadena	Hist. 145	43 Roble
Green, Frederick Rufus	DesMoines,Ia.	M. E. 85	Delta Tau Delta
Green, Norman Boynton	Redlands	C.E. 17	Chi Psi
Greening, Helen K. A. B., Stanford, 1917.	Los Angeles	Lat. gr.	Delta Delta Delta
Greer, Margaret	San Jose	Math. 110	82 Cypress, SJ-sj
Gregory, Elizabeth Jackson	Pasadena	Econ. 13	Sigma Kappa
Greis, Arnold John	Los Angeles	PreL. 64	533 Encina
[1]Griffin, Raymond Rudolph	Salinas	Law 161	Delta Chi
Grinnell, Fordyce, Jr.	Pasadena	Ent. 190	60 Encina
[1]Griswold, Hugh Harris	Modesto	PreL. 60	416 Encina
Grosfield, Helen Isabel	Los Angeles	Greek 163	Delta Gamma
Ground,RayGranville	Independence,Ore.	Econ. 40	9 Cabrillo
[1]Grout,WilliamAlexander	Portland,Ore.	Phyl. 3	Phi Delta Theta
Guilbert,Victor Douglas	El Oro,Mexico	M. E. 7	274 W.SantaClara,SJ
[1]Guild, Ruth Edna A. B., Ohio Wesleyan, 1914.	Santa Monica	Lat. gr.	Alvarado Hall
[1]Hackett, Russel Graham	Spokane,Wn.	C.E.13	Delta Kappa Epsilon
Hadley, Edwin Wilson	San Diego	Law 105	50 Encina
Haig, Raymond Thomas	Oakland	Phyl.-Med. 139	430 Encina
Haines, Emily Moore	Santa Barbara	Fr. 61	Pi Beta Phi

[2]Haines, Mary Eleanor	Oakland	Engl.	Kingscote Apts.
Haines, Wilbur Heath	Oakland	Geol. 118	Theta Delta Chi
Haist, Helen Eugenia	Lemoore	Span. 55	Madrono
Haldeman, Harry Francis	Hollywood	Econ. 14	Kappa Sigma
Hale, Ruby Virginia	San Francisco	Engl. 102	KappaAlphaTheta
[1]Hales,WalterHodgson	Anchorage,Alas.	M. E. 48	231 Encina
Haley, Melvin Collins	San Jose	C. E. 17	Theta Delta Chi
Hall, Clarence Rector	Mt.Vernon,Wn.	Chem. 153	122 Encina
Hall, Dorothy	Santa Barbara	Fr. 13	89 Roble
Hall, Helene Mary	San Mateo	Span. 80	29 Baywood,SM-sm
Hall, James Hinquong	San Mateo	Chem.121	421 1st Ave.,SM-sm
Hall, Jean Ethel	Los Angeles	Math. 156	Pi Beta Phi
Hall, Lawrence Chalmers	Riverside	Fr. 58	Delta Upsilon
Hall, Lucy Alice A. B., Stanford, 1917.	San Mateo	Fr. gr.	144 Griffith, SM-sm
Hall, Myron Crawford	San Mateo	Engl. 150	Phi Kappa Psi
[2]Hall, Norma Pierce	Hollywood	Engl.	Delta Gamma
[1]Hall, Winslow Gladwin	San Mateo	C. E. 110	316 Encina
Hallmeyer,CarmenGertrude	SantaClara	Law 56	Chi Omega
Hamilton, Alice	Palo Alto	Hist. 52	1200 Emerson-p
Hamlyn, Geraldine Mary A. B., Stanford, 1917.	Marysville	Sc. Ed. gr.	Pi Beta Phi
Hamlyn, Thomas Joseph	Marysville	Geol. 9	Beta Theta Pi
Hammond,GeorgeRolland	Westlake,Ore.	M. E. 154	324 Encina
Hampton, Fred George A. B., Stanford, 1917.	Palo Alto	M. E. gr.	712 Waverley-p
Hancock, Beatrice Margaret	Riverside	Hist. 167	Delta Gamma
Hand, Arlene Zweifel	Hillyard, Wn.	Lat. 62	28 Roble
Hanna, Dorothy Edwina	Los Angeles	Hist.101	KappaKappaGamma
Hansen, Hazel Dorothy	San Mateo	Lat. 60	402 Tilton, SM-sm
Hansen, Lorenz Max	Oakland	PreL. 33	Delta Tau Delta
Harding,PhilippiHarriette	LosAngeles	Math. 83	85 Roble
Hardy, Anne	San Diego	Econ. 15	63 Roble
[2]Hare, Dorothy	Salinas	Econ.	81 Roble
Hargrove, Stone L.	Pittsburg, Tex.	Econ. 146	540 Encina
Harker, Charles Andrew	San Jose	C. E. 12	739 Jackson, SJ-sj
Harper, Edward Baldwin	Los Angeles	PreL. 72	231 Encina
[1]Harper,William Alexander	SantaCruz	Econ. 91	Phi Kappa Sigma
[2]Harriman,LorenS.	Minnewaukon,N.D.	Econ.	11 Salvatierra
Harris, Benjamin Arthur	Menlo Park	Law 98	Menlo Park-mp
Harris, Harley Hugo	Okmulgee, Okla.	Econ. 16	DeltaKappaEpsilon

Harris, Melville David	Modesto	Econ. 110	245 Encina
Harrison, George Russell	Halcyon	Phys. 102	56 Encina
Hart, Benno, Jr.	San Francisco	Fr. 10	321 Encina
Hartley, Hugh Philip	Baldwin City, Kan.	PreL. ‡3	Delta Tau Delta
Hartman, Barnard Wilson	Palo Alto	PreL. 60	615 Middlefield-p
Hartman, Hans	Crockett	Ger. 11	315 Encina
Hartsoe, Francis Maurice	Oakdale	PreL. 66	752 Middlefield-p
Hartzell, Ham Charles	Bakersfield	Hist. ‡6	Delta Chi
Harvey, Harold Franklin	Eldon, Mo.	Econ. 85	Phi Delta Theta
Harzfeld, Arthur Jerome	San Francisco	PreL. 73	116 Encina
Hastings, Alice Narcissa	Pasadena	Engl. 17	427 Webster-p
[1]Haub, Neilson George	San Francisco	Chem. 12	1996 Union, SF-sf
[1]Hauser, Henry Peter	San Francisco	Econ. 120	334 Encina
Hawley, Allen Clark	Clinton, Ia.	M. E. 16	41 Encina
[2]Haxton, Wallace Raymond	Long Beach	Econ. 36	Encina
[2]Haydock, Evelyn G.	San Jose	Phys. gr.	487 N. 5th, SJ-sj
A. B., Stanford, 1916.			
[1]Hayes, Eugene	Madera	Econ. 181	Alpha Tau Omega
A. B., Stanford, 1918.			
Hays, Samuel Ewing	Palo Alto	C. E. 56	359 Encina
Hazeltine, Roland P.	Los Angeles	C. E. ‡8	Delta Upsilon
Heath, Ronald Wayland	Palo Alto	Chem. 34	Phi Delta Theta
Heathcote, James Gerard	Hanford	Econ. 54	229 Encina
Hedlund, Waldemar	Santa Clara	Chem. 5	507 Lafayette, SC-sc
[2]Hehr, Wm. Frederick	Upper Sandusky, O.	Math. ‡	Wav'ley and Teny'n-p
Heise, Sigfried Chris	Gardnerville, Nev.	Econ. 13	224 Encina
[1]Heller, Edward Hellman	San Francisco	PreL. 18	500 Encina
Hellwig, Erle Edward	Mt. Eden	C. E. 9	Kappa Sigma
Helmick, Walter Edmund	Helena, Mont.	M. E. 142	115 Encina
Helsley, Gordon Friedrich	Fresno	Med. gr.	2102 Calif., SF-sf
A. B., Stanford, 1915.			
[1]Henderson, Cecilia	Santa Paula	Lat. 117	Sigma Kappa
Henderson, James Ralph	Los Angeles	Span. 15	25 Salvatierra
Henderson, Paul Fleming	Spokane, Wn.	C. E. 9	25 Alvarado
Henderson, Paul Leroy	Lucerne, Colo.	Geol. 53	Theta Delta Chi
Henn, Marion Mona	Oroville	Span. 86	Pi Beta Phi
[1]Henry, Kenneth Malcolm	Livermore	Chem. 148	404 Encina
[2]Henry, Mary Bess	Santa Ana	Educ. gr.	Alvarado Hall
A. B., Chicago, 1902; A. M., Knox, 1907.			
Henry, Wilbur Amos	Los Angeles	Econ. ‡	Zeta Psi
Herbert, Frank Barnes	Los Gatos	Ent. gr.	Los Gatos-lg
B. S., California, 1914.			

[1]Heron, Ivan Clyde	Watsonville	Phyl.-Med. 155	430 Encina
Herrington, Fred S.	Ogden, Utah	Econ. 17	Delta Chi
Hertel, Francis Westerfeld	Pasadena	C. E. 15	Zeta Psi
Hertel, Herbert Rudolph	Pasadena	Econ. 159	Zeta Psi
[1]Hess, Emma Beatrice	Burlingame	Psych.‡19	1268Cortez av.,B-b
Hettinger, Eunice Walker	Fowler	Econ. 157	69 Roble
[2]Hettinger, Mathias	Fowler	Law	235 Encina
Hevener,EmilieMarguerite	Sacramento	Math. 59	Alpha Phi
Hevener,Ruth Clara	Sacramento	Bot. 85	57 Roble
Hewitt, Mary Elizabeth	San Jose	Zool. 15	35 Salvatierra
[1]Hews, Hayden Lewis A. B., Stanford, 1917.	Riverside	Law gr.	323 Encina
Heynemann, Lloyd Gibbs	San Francisco	Fr. 14	Kappa Alpha
Hichborn, Paul Revere	Santa Clara	Bot. 13	1091 Fremont, SC-sc
Hickinbotham, John Cyrus	Stockton	PreL. sp. 36	PhiGammaDelta
Highley, Blanche Marie	San Francisco	Ger. 50	82 Roble
Hihn, Teresa	Aptos	Econ. 80	Alpha Phi
Hill, Marion	Los Angeles	Math. 87	19 Salvatierra
Hill, Roy Irving	Medford, Ore.	M. E. 15	Beta Theta Pi
Hills, William Leslie	San Francisco	M. E. 79	Theta Delta Chi
Hinchliffe,MargaretPurvis	SanFrancisco	Engl. 147	Delta Delta Delta
Hinkle, Lucile Bernice A. B., Stanford, 1917.	San Diego	Ed.-G. A. gr.	4 Madrono
[1]Hipp, John, Jr. A. B., Denver, 1916.	Denver, Colo.	Phys. gr.	246 Encina
[2]Hirata, Henry Hikoichi	Los Angeles	Chem.	Japanese Club
Hirst, Charles Harold	Douglas, Ariz.	M. E. 63	513 Encina
Hobson, Vivian Irene	Pasadena	Fr. 110	36 Roble
Hodges, Lauder Watson	Palo Alto	Hist. 16	451 Channing-p
[1]Hoever, August Joseph	Willows	C. E. 138	Theta Delta Chi
Hogg, Melita Mary	Saratoga	Fr. 13	Saratoga-s
Holberton,FlorenceHorton	RedwoodCity	Fr. 13	Kappa Kappa Gamma
Holden, Elizabeth Hyde	Evanston, Ill.	Engl. 116	46 Roble
[2]Holdzkom, Grace	Imperial	Educ. ‡	Madrono
[2]Holeman, George Stevenson A. B., Stanford, 1913.	Riverside	Med. gr.	2575Wash'g'n,SF-sf
[2]Hollingsworth, SidneyP.	Wash'gt'n,D.C.	Engl. ‡	Kappa Alpha
Holman, Frances	Palo Alto	Hist. 105	558 Lincoln-p
[1]Holmes, William Henry	Roseburg, Ore.	C. E. 98	627 Homer-p
Holt, Alfred Preston	Portland, Ore.	Phyl. 12	Chi Psi
[1]Holt, James Martin	El Centro	Econ. 109	Delta Tau Delta
Holven, Alfred Leonard	Long Beach	Chem. 12	43 Encina

Hood, Arthur James	Reno, Nev.	Med. gr.	667 Hamilton-p
A. B., Stanford, 1917.			
Hood, Wilbur Kenneth	Portland,Ore.	Econ. 60	Hotel Palo Alto-p
[1]Hoover,FentonWhitman	Portland, Ore.	C. E. ‡	737 Bryant-p
Hoover, Mervyn Charles	Calistoga	Econ.	Sigma Chi
Hopkins, Marjorie Chess	Pomona	Econ. 152	24 Roble
Hopwood, Helen Frances	Palo Alto	Hist. 99	321 Alma-p
Horn, Everett Ellis	Ritzville, Wn.	Phyl. 61	Alpha Tau Omega
Horn, John Louis	Palo Alto	Educ. gr.	643 Webster-p
A. B., Pennsylvania, 1906; LL. B., Columbia, 1910.			
Horr, Oren Glenn	Farmer City, Ill.	Econ. 9	310 Encina
[1]Horton, W. Ogden	Newcastle, Wyo.	Phyl. 114	Sigma Chi
Hosepian, Haig Mitchell	Sanger	Chem. 11	301 Pope
[1]Hosoi, Tobey Rutei	Kamakura, Japan	Econ. gr.	Japanese Club
A. B., Heidelberg (Ohio), 1914.			
Hoss, Herman Hubert	Corona	Law 150	El Camino
[1]Hough, Walter Seneff	Ruffsdale, Pa.	Ent. 190	446 Hamilton-p
A. B., Stanford, 1918.			
[2]House, Meredith J.	Riverside	Econ. 61	Beta Theta Pi
Howard, Lowry Samuel	Mica, Wn.	Educ. gr.	44 Encina
A. B., Stanford, 1917.			
[1]Howard, Ward Davis	Gratan	Chem. 53	14 Encina
Howe, Charles Dudgeon	Denver, Colo.	M. E. 119	347 Alma-p
Howes, Durward	Los Angeles	Econ. 40	Alpha Tau Omega
Howes, Laurence Madison	Clinton, Ia.	Econ. 62	41 Encina
Hoxsie, Earl Justin	Folsom	M. E. 15	20 Encina
[2]Hsieh, Chia-Yung	Shanghai, China	Geol. gr.	405 Emerson
Geological Institute, Peking, China.			
Hubbard, Charles	San Francisco	M. E. sp. 99	El Camino
Hudner, Charles William	Hollister	PreL. 32	Delta Tau Delta
Hudson, Doris	Fresno	Engl. 56	Madrono
Huff, Frances Lucile	Palo Alto	Econ. 102	475 Melville-p
Hughes, Thomas P., Jr.	Palo Alto	Chem. 8	361 Channing-p
Humiston, Elizabeth	Long Beach	Ed.-G. A. 103	24 Roble
[2]Humphrey, Winifred Lillian	Cupertino	Phyl. ‡	Cupertino-c
[1]Humphries, Clare	Palo Alto	Greek 14	Alvarado Hall
Humphries, Florence Yost	Palo Alto	Engl. gr.	Los Gatos-lg
Ph. B., Cornell, 1888; A. M., Stanford, 1916.			
Humphry, Eldon Eldred	Cupertino	C. E. 123	Cupertino-c
Huneke,ElizabethChristine	LosAngeles	Engl. 37	Kappa Alpha Theta
Hunie, Frederick Blydenburgh	Nat'lCity	M. E. 11	430 Ramona-p
[2]Hunt, Harriet	Pasadena	Econ.	Kappa Kappa Gamma

Hunter, Clarence Lester	Redlands	Phyl.-Med.174	ThetaDeltaChi
Hunter, Iva Fern	Glendale	Hist. 136	Sigma Kappa
[1]Hunter, Kenneth Hume	Auburn, N. Y.	Geol. 43	SigmaAlphaEpsilon
Huntington, Katherine	Palo Alto	Ger. 104	516 Kingsley-p
[1]Huntsberger,Raymond W.	Los Angeles	Phyl. 112	Kappa Sigma
Hurley, Charles Clifton	Albion	Hist. 112	201 Encina
Hurley, Jere Elwood	Albion	Hist. 72	201 Encina
Hutton, Mildred Marie	Lemoore	Span. 15	Chi Omega
Hyatt, Antonia	Sacramento	Chem.149	KappaAlphaTheta
Hyatt, Edward, Jr.	Niles	C. E. gr.	Niles-n
A. B., Stanford, 1912.			
[2]Hyatt, Persis	Sacramento	Zool.	81 Roble
Hyer, Anna Doris	Macon, Ga.	Chem. 58	62 Roble
[1]Ide, Francis de Sales	Los Angeles	Econ. 8	Delta Tau Delta
[1]Imokawa,John Kiichi	Los Angeles	Fr.	1a Alvarado-p
Ingoldsby, Kirby	Pontiac, Mich.	M. E. 10	14 Roble
[2]Ingraham,F.Douglas	Minneapolis,Minn.	Phil.	Theta Delta Chi
Irvine, Myford Plum	San Francisco	Chem. 12	Theta Delta Chi
Iseri, Kamehachi Thomas	Los Angeles	Chem. ‡11	Japanese Club
Ito, Charles	Tokyo, Japan	Engl. 29	Japanese Club
[1]Jacobs, Mishel E.	Urmia, Persia	Econ. ‡5	547 Encina
Jacoby, Lionel Arnold	Oroville	Phyl. 55	400 Encina
James, Arthur George	Palo Alto	M. E. 67	215 Churchill-p
James, Charles Alfred	Palo Alto	Med. gr.	334 Homer-p
A. B., California, 1915.			
James, Edith Mary	Riverside	Span. 64	Alpha Omicron Pi
Jameson, Carol Edna	Corona	Med. gr.	64 Roble
A. B., Stanford, 1917.			
Jameson, Hetty Joy	Corona	Hist. 150	Delta Gamma
[1]Janney, Dewey H.	Los Angeles	Geol. ‡5	Delta Tau Delta
[1]Janney, Vernon William	Los Angeles	Geol. 21	Delta Tau Delta
Janson, Gilbert L.	Cedar City, Utah	Econ. gr.	559 Cowper-p
B. S., Utah Agricultural College, 1914.			
Jefferson, Edward Milton	Inglewood	Educ. 107	532 Homer-p
[1]Jenkins, Henry Stewart	Pittsburg, Pa.	Geol. 79	Theta Xi
Jensen, Martin Frederick	Spokane, Wn.	Econ. 13	142 Encina
Jepsen, Hans J.	Gardnerville, Nev.	PreL. 60	Delta Tau Delta
Jertberg, Gilbert Henry	Chino	Law 110	El Camino
Johannsen, Alfred	Corte Madera	Chem. 122	Theta Xi
Johannsen, Kenneth Hutton	Lemoore	Chem. 54	229 Encina
Johnson, Arthur Lockwood	San Jose	Law. gr.	381 N. 13th, SJ-sj
A. B., Stanford, 1916.			

Johnson, Mildred Lorenz A. B., Stanford, 1917.	Pasadena	Ger. gr.	7 Salvatierra
Johnson,Oscar Frederic A. B., Stanford, 1915.	Mt.Vernon,Wn.	Med. gr.	825 Baker, SF-sf
Johnson, Sidney Preston	Red Bluff	M. E. 40	Sigma Chi
Johnson, Teresita Trescony	Monterey	Fr. 117	Alpha Phi
Johnston. Dorothy	San Jose	Econ. 13	Alpha Phi
Johnston, Russell R.	San Jose	PreL. 60	130 S. 7th, SJ-sj
Johnston,Winifred Belle	Stanford Univ.	Fr. 6	4 Alvarado
Jones, Gertrude Flint	Palo Alto	Phyl. 105	1061 Bryant-p
Jones, Grace Elizabeth	Fullerton	Span. 106	53 Roble
Jones, J. Walter A. B., Stanford, 1913.	Stanford Univ.	Med. gr.	El Camino
Jones, Lecile	Long Beach	Econ. 155	Delta Gamma
Jones, Philip Hanby	Alhambra	Chem. 169	404 Encina
[1]Jones, Robert Morris	Los Angeles	Econ. sp. 16	Kappa Alpha
Jones, Ruth Albertine	Pasadena	Econ. 15	Pi Beta Phi
Joy, Clifford Emerson	Santa Paula	Hist. 10	501 Encina
Kahle, Loren John	Oil City, Pa.	Fr. ‡14	1037 Ramona-p
[1]Kahle, Richard Frederick A. B., Stanford, 1918.	San Diego	Law 182	327 Encina
Kai, Gunki	San Francisco	Econ. 14	Stanford Park
Kakimoto, Nikizo	Tokyo,Japan	Chem. 61	Japanese Club
Kalischer, Helen Ruth	San Francisco	Law 151	50 Roble
Kallam, Floyd Lorn	San Diego	M. E. 14	Theta Xi
Kawahara, John Yoshio	Nagoya, Japan	Econ. sp. 213	Japanese Club
Keeffe, Anna Phillips A. B., Morningside, 1917.	Sioux City, Ia.	Engl. gr.	Madrono
Keen, Sadie Ernestine	Palo Alto	Ent. 93	847 Bryant-p
Kegley, Carl Smith A. B., Stanford, 1917.	Los Angeles	Law gr.	534 Encina
[1]Kegley, Helen Catherine	Los Angeles	Zool. 131	Roble
Keith, Willard Dwight	Pasadena	Econ. 13	18 Encina
Kelker,GeorgeDavid A. B., Stanford, 1915.	Glenw'dSpgs.,Colo.	Med. gr.	2102 Calif., SF-sf
[1]Kelley, Alberta Patricia	Los Angeles	Phyl.	Alvarado Hall
Kelley, Rose Marie	Redlands	Fr. 155	27 Roble
Kellogg, Chever	Avondale, Colo.	M. E. 108	434 Encina
[1]Kelly, Dorothy Elizabeth	Palo Alto	Engl. 127	KappaAlphaTheta
Kelly, Katharine Louise	Palo Alto	Econ. 60	Chi Omega
[2]Kennedy, Mark Edgar	Campbell	Econ.	45 Encina
Kenney, Elizabeth Jane	Palo Alto	Econ. 15	36 Roble

Kenny, Robert Walker	Los Angeles	Econ. 12	Kingscote Apts.
Kerr, James Charles	Seattle, Wn.	Law 142	Alpha Delta Phi
Kerr, Kathleen Margaret	San Mateo	Span. 32	Delta Delta Delta
Kerr, Mildred Lenora	Saratoga	Engl. 153	Sigma Kappa
[1]Kessel, Harry Louis	Stockton	Ger.	60 Encina
[1]Kibler, Dorothy Imo	Palo Alto	Econ.	467 Melville
Kimber, George Card	Palo Alto	Math. 76	305 Melville-p
[1]Kincaid, George Clark	Manila, P. I.	Law 180	Phi Gamma Delta
[1]King, Harold Nelson	Sacramento	Phyl. 40	505 Encina
King, Maxwell Clark	Los Angeles	Chem. 12	Alph Delta Phi
King, Melissa	Palo Alto	Ger. 153	435 Homer-p
[1]King, Percy Ensign	Napa	Law 166	Delta Tau Delta
[1]King, William Henry	Winters	Law 74	524 Encina
Kinney, Paul Burt	S. Pasadena	Phyl. 10	Delta Upsilon
Kinney, Wendell Harcourt	Los Angeles	M. E. 15	Zeta Psi
Kircher, William Jay	Berkeley	Educ. ‡13	423 Encina
[1]Kirkwood, Elizabeth	San Francisco	Hist. 60	Delta Gamma
Kistler, Ray Henry A. B., Stanford, 1915.	Huntington Park	Med. gr.	2102 Calif., SF-sf
Kitagawa, Kay Jiro A. B., Stanford, 1914.	Kioto, Japan	Med. gr.	1850 Pine, SF-sf
Klahn, Arletta Inez A. B., Stanford, 1917.	Orange	Sc. Ed. gr.	71 Roble
Klassen, Peter Abraham	San Diego	Ger. ‡18	College Terrace
Kleinpell, William Darwin	Los Angeles	Geol. 50	307 Encina
Kline, Mortimer Allen	Los Angeles	Hist. 13	5 Santa Ynez
Kluegel, Elsa Margaret	Stanford Univ.	Ger. 44	Cooksey Lodge
Knight, Goodwin Jess	Los Angeles	Law 106	Alpha Delta Phi
[2]Knipmeyer, Gilbert Ervin	Alma, Mo.	Engl. ‡	712 Waverley
Knox, Fannie Mapes	Palo Alto	Hist. 146	325 Everett-p
Knox, George Livingston	Palo Alto	Chem. 61	325 Everett-p
[1]Knudtson, Robert	Kingsburg	Chem. 103	451 Encina
[1]Koester, Henry Charles	San Francisco	Econ. sp. 4	226 Encina
Kohs, Samuel C. B. S., College of New York, 1912; A. M., Clark, 1914.	Palo Alto	Educ. gr.	751 Webster-p
Kolb, Julius Howard	Denver, Colo.	Engl. 15	22 Encina
[1]Kolberg, Victor Mueller	Sheboygan, Wis.	Econ. ‡9	425 Encina
Kolberg, Wallace Leonard	Phoenix, Ariz.	Chem. 56	425 Encina
Kortick, Nelda Gertrude	San Francisco	Hist. 15	Delta Delta Delta
Kraemer, Hilda Webster	San Diego	Engl. 6	Gamma Phi Beta
Kusama, Yoshio A. B., Stanford, 1916.	Nagano-Ken, Japan	Med. gr.	1671 Post, SF-sf

[2]Lacey, Lorin Daryl	Monterey	M. E.	Delta Upsilon
Lacoe, Ralph Dugue	Riverside	Econ. 15	427 Encina
La Grange, Mary Barnes	Hollywood	Econ. 157	Alvarado Hall
Lakin, Ruth Caroline	Palo Alto	Hist. 104	Delta Delta Delta
Lall, Shiam	Gwalior, India	Phyl. 15	333 Waverley-p
Lamb, Veryl Georgette	Hoquiam, Wn.	Econ. 14	Madrono
La Montagne, Leslie H.	Los Gatos	M. E. 66	62 Encina
[1]Landels, Edward Durley	San Jose	Econ.	R.R.A.,Bx.80,Noble,S.J.
Lang, Evelyn Lucile	Fullerton	Engl. 151	71 Roble
Langdon, Lucy Anita	Los Angeles	Educ.-G.A. 114	Alpha Phi
Langford, Verne	Eureka	Chem. 40	525 Encina
Largent, Mary Elizabeth	Oakland	Educ.-G.A.64	KappaKappaG.
Larimer, Aline Rose	Hollywood	Econ. 13	Alpha Omicron Pi
Laros, Gerald	Grinnell,Ia.	M. E. 57	207 Encina
Larsen, Ira Henry	San Francisco	C. E. 128	Kappa Sigma
Larsen, Joseph Urban	Miami, Ariz.	Geol. 14	143 Encina
[2]Lattig, Bayard Blakesley	Payette, Ida.	Econ.	9 Alvarado
[1]Laugenour,William R.,Jr.	SanFrancisco	Hist. 15	301 Lowell-p
Lavagnino, Mary Louise	Pasadena	Econ. 112	68 Roble
Lawson, Millard Ernest	Boonville	Geol. 144	Phi Kappa Psi
[1]Layman, Everett Seymour	Reno, Nev.	Law 137	557 Encina
Leahy, Kathleen Mabel	Upland	Span. 76	61 Roble
Leak, John Amiel	Penryn	Econ. 156	306 Encina
Lee, De Witt Rogers	Modesto	PreL. 61	Delta Tau Delta
Lee,Ethel	Palo Alto	Span. 113	970 University-p
Lee, Huylar W.	Groveland Sta., N. Y.	M. E. 12	202 Encina
Lee, Lola	Palo Alto	Ger. 117	970 University-p
Lee,RusselVanArsdale B. S., California, 1917.	SpanishFork,U.	Med. gr.	2531 Wash.,SF-sf
Leeds, Albert W.	San Diego	PreL. 68	Kappa Alpha
Leh, Clarke Franklin A. B., Stanford, 1917.	Trident, Mont.	M. E. gr.	431 Encina
Leib, Karl Elias A. B., Stanford, 1916.	Iron Mountain, Mont.	Law gr.	160 Webster
Leib, Rachel Smith	Newhall	Zool. 55	160 Webster
Leicester, Elsie Allen	San Francisco	Ed.-G.A.16	KappaKappaGam.
Leigh, Jerrold Douglas	Spokane, Wn.	Econ. 69	Delta Upsilon
Leiser,WilliamFrederick	TwinFalls,Ida.	Hist. 16	108 Encina
[3]Leonard, Eileen Mary A. B., California, 1917.	San Francisco	Med. gr.	Alvarado Hall
Lernhart, Albert Aloysius	Napa	C. E. 46	328 Encina
Lesley, Lewis Burt	Los Angeles	Hist. 53	304 Encina

Levi, Melbourne	Hoquiam, Wn.	Law 156	424 Encina
Levison, Robert Mark	San Francisco	Econ. 14	321 Encina
Levy, David Nathan	Prescott, Ariz.	Chem. 111	426 Encina
Levy, Gaston Jack	San Mateo	Chem. gr.	221 Encina
A. B., Stanford, 1916, Engineer, 1917.			
[1]Levy, Germaine J.	San Mateo	Fr. 180	19 Laurel, SM-sm
A. B., Stanford, 1918.			
Levy, Milton Lester	Los Angeles	Phyl. 107	426 Encina
Lewelling, Raymond	St. Helena	M. E. 61	Redwood City-r
[2]Lewis, Genevieve Mildred	La Jolla	Hist. ‡	Madrono
Lewis, Georgia Belle	Riverside	Ed.-G.A. 142	Alpha Phi
Lewis, John Kent	San Diego	Phyl.-Med. 151	529 Encina
Lifur, Gregory Henry	Sierra Park	Chem. 66	Theta Xi
Liggett, Hazel Mary	Los Angeles	Econ. 166	Delta Gamma
[1]Likely, Homer Edmund	Ukiah	Chem.63	High&Hawthorne-p
Lillie, Ralph Dougall	Monterey	Med. gr.	2017 Webster,SF-sf
A. B., Stanford, 1917.			
Lilly,John Kenneth	Ashland, Ore.	Law 107	Theta Delta Chi
Linn, Frank Chester	Merced	M. E. 62	136 Encina
Linn, George Irving	Huntington Beach	Chem. 145	136 Encina
[1]Linwood, Charles Earl	San Diego	Hist. ‡	357 Encina
Lissner, Louis Meyer	Los Angeles	Law 107	327 Encina
Litchfield, Everett S.	Independence,Kan.	Econ. 10	Phi Gamma Delta
[1]Little,Paul Livingston	Modesto	Econ. 58	109 Encina
Littleon, Calvin Tracy	Hermosa Beach	Econ. 61	Beta Theta Pi
[2]Liu, Chi-Chen	Shanghai, China	Geol. gr.	405 Emerson
Geological Institute, Peking, China.			
Lloyd, Hubert Blakemore	San Francisco	Econ. 13	Chi Psi
[1]Loel, Wayne Frederick	Saratoga	Geol. gr.	319 Encina
A. B., Stanford, 1916, A. M., 1917.			
Logie, Helen Corita	Redlands	Fr. 153	Pi Beta Phi
[1]Long, Thomas Gordon	Pacific Grove	Hist. 51	Encina
[1]Longmoor, Harold S.	Mesa, Ariz.	Phyl. ‡	20 Encina
Loomis, Emily Mary	Pasadena	Engl. 105	19 Salvatierra
Loomis, Marian Mason	Chicago, Ill.	Fr. 58	Alpha Omicron Pi
Lormer, Elizabeth Bernice	Pasadena	Ger. gr.	11 Roble
A. B., Stanford, 1917.			
Lowe, Frances E.	Palo Alto	Math. 166	218 Middlefield-p
Lownsberry, Eleth Agnes	Palo Alto	Engl. 52	1048 Ramona-p
Lowrey, Rachel Gertrude	Wilmington	Hist. ‡14	Alvarado Hall
[2]Lozier, Mervyn Harry	Los Gatos	Econ. ‡	3 Foster Rd.,LG-lg
Luhrs, George Henry, Jr.	Phoenix,Ariz.	Law 168	Delta Chi

Lund, Henry Joseph, Jr.	San Jose	Zool.151	526SpencerAv.,SJ-sj
Lund, Ralph Frederick	San Francisco	Chem. 50	448 Encina
Lundquist,LeonardCottrell	SanFrancisco	Geol. 12	448 Encina
Lutz, Elsie Henrietta	Santa Ana	Hist. 153	KappaAlphaTheta
Lynn, Joseph Clarence	Palo Alto	Chem. 17	181 Tasso-p
Lynn, Leo Thomas	Palo Alto	M. E. 116	181 Tasso-p
Lyon, Leonard Saxton	Los Angeles	Law 159	Delta Chi
Lyon, Lucile Kittredge	Oakland	Span.101	KappaKappaGamma
Lyon, Nora Cordelia	Palo Alto	Chem. 46	300 Hamilton-p
Lyon, Ray Blanchard	Sacramento	Law gr.	660 Waverley-p
A. B., Stanford, 1917.			
Lyon, Richard Forbes	Los Angeles	Chem. 60	Delta Chi
Lysle, Heloise	Alhambra	Lat. 109	Kappa Alpha Theta
McAllister, Decker Gordon	San Mateo	M. E. 64	11 Salvatierra
[1]McAnear, Francis Towne	Sacramento	PreL. 61	29 Encina
MacArthur, Elizabeth	San Francisco	Fr. 15	Kappa Kappa Gamma
[1]McCarty, Harold L.	Fellows	M. E. 116	30 Encina
McCarty,JosephineM.	SaltLakeCity,Utah	Lat. 140	Delta Gamma
McCausland,Harriet Rosa-Lee	Hollister	Engl. gr.	33 Roble
A. B., Stanford, 1917.			
MacClellan,Elizabeth de Levis	San Mateo	Lat.13	15CrystalSpgs.,SM-sm
McClintock, Miller L.	Long Beach	Engl. 155	375LittleKingsley-p
McCloskey, Downs	Durango, Colo.	Geol. 133	Delta Upsilon
[1]McClung,Ryland Eugene	Portland,Ore.	Law 133	408 Encina
MacColl, Douglas Roy	San Francisco	Med. gr.	2200 Hayes, SF-sf
B. S., California, 1914.			
McCombie,Harold Edward	San Andreas	Hist.13	CooleyAv.Runnymede
[1]McCormack,DwightFerguson	RioVista	PreL. 45	Delta Chi
McCormick, Charles Leslie	Fowler	Hist. 103	124 Encina
McCreary, Laura May	Hanford	Engl. gr.	Sigma Kappa
A. B., Stanford, 1917.			
McCrone,Elizabeth Barry	SanFrancisco	Engl. 154	1426 11th ave.,SF-sf
McDiarmid, Donald Philip	Stockton	PreL. 59	29 Encina
MacDonald,HarryFelts	SanLuisObispo	C. E. 14	111 Encina
McDonnell, Anne	Portola	Span. 111	R.D.1,RedwoodC'y-r
[2]McElin, Margaret Mary	KansasCity,Mo.	Engl. ‡	Roble
McElroy, Floyd Lester	Willits	Hist. 16	20 Encina
McGee, Frederika Prohl	Pasadena	Econ. 12	68 Roble
McGillivray,Harold Payne	Sacramento	PreL. 60	Phi Kappa Sigma
Machado, John Homen	SanLuisObispo	Law gr.	544 Encina
A. B., Stanford, 1916.			

McHenry, Beatrice A. B., Stanford, 1911.	Palo Alto	Hist. gr.	121 Emerson-p
[1]Mack, Charles Edwin, Jr.	Elk Grove	C. E. sp. 45	437 Encina
[2]Mackay, Eaton Macleod	Suisun	Chem. ‡	200 Encina
[1]McKee, Donald	San Francisco	C. E. 91	Theta Delta Chi
McKenna, Mary Susan A. B., Stanford, 1917.	Lemoore	Sc. Ed. gr.	27 Roble
McKinney, John W.	Roswell, N. M.	C.E. 14	612 Waverley-p
McKissick, Joe Carson	Wallace, Ida.	Econ. ‡	Alpha Tau Omega
Mackler, Hyman	Willows	M. E. 9	Encina
MacLaren, John William	Portland, Ore.	Engl. 16	447 Encina
McLellan, Edith	Burlingame	Engl. 62	Gamma Phi Beta
McMenamin,James Thomas	Sebastopol	PreL. 64	558 Encina
McNamee.Donald Edwin	Helena, Mont.	Econ. 33	Delta Upsilon
[1]McNeil, Archibald Miles	Ceres	Econ. 10	27 Encina
MacNeil, Charles Donald	Atherton	Phyl. 70	837 Cowper p
McPherson, James Douglas	San Jose	Geol. 154	309 Encina
[1]McQuarrie,KennethRiepen	Chicago,Ill.	Phyl.	248 Encina
[1]McSherry,Francis Thomas	Watsonville	Econ. 5	57 Encina
McSherry, Joseph M.	Watsonville	Econ. sp. 15	57 Encina
[1]McVay, Harry Ferdinand	Santa Ana	M. E. 1	543 Encina
Madden, Francis Martin	Bay City,Mich.	M. E. 106	11 Salvatierra
Maddock, Mary Grace	Sacramento	Engl. 69	Delta Gamma
MahoneyLucille Josephine	Wallace,Ida.	Bact. 59	25 Roble
Mail, Elizabeth Louise	Los Angeles	Span. 51	Pi Beta Phi
Mandl, Joseph	Phoenix, Ariz	Hist. ‡15	15 Encina
Manning, El Donne S.	Los Angeles	PreL. 56	15 Encina
Mantz, Ruth Walker	Redwood City	Engl.97	502Edgewood,RC-rc
[1]Marino, Herbert Daniel	Stockton	Phyl. 82	420 Encina
Marquess, Roy Stephen	Burley, Ida.	M. E. 42	560 Encina
Marquis, Vernon	Twin Falls, Ida.	M. E. 17	108 Encina
Marston, Dorothy	San Rafael	Fr. 14	Chi Omega
[1]Marston, Homer Eugene	San Rafael	Phyl.-Med. 132	136 Encina
Martie, Menga Anne A. B., Southern California, 1916.	Los Angeles	Chem. gr.	38 Roble
[1]Martin, Edward Richard	Watsonville	Law 113	126 Encina
[2]Martin, Hazelle Hortense	Oakland	Econ. ‡	Madrono
[2]Martin, Hugh Bradshaw	Los Angeles	Pre L. 40	Delta Upsilon
Martin, Walter Talbot	Phoenix, Ariz.	Phyl. 55	433 Encina
Marx, Alberta	Palo Alto	Econ. 11	357 Kingsley-p
Marx, Eleanor	Palo Alto	Econ. 102	356 Lincoln-p

Marx, Guido Van Dusen	Palo Alto	M. E. 13	356 Lincoln-p
Mason, Florence McLaine	Palo Alto	Engl. 153	KappaAlphaTheta
Mason, Grace Amelia	San Jose	Engl. 155	628 S.10th St.,SJ-sj
Mason, Robert Elliott	Oil City, Pa.	Chem. 57	Phi Kappa Psi
Masson, Adele Louise	San Jose	Hist. ‡27	9 Roble
Masters,Edward Wilbur	Portland,Ore.	Geol. 112	316 Encina
Mathews, Bruce Reid	Scipio, Utah	Chem. 150	921 Ramona-p
Mathews, Margaret Mary A. B., Stanford, 1917.	Eureka	Sc. Ed. gr.	Pi Beta Phi
[1]Mathews, Paul McNair	Ukiah	Chem. 6	Phi Kappa Psi
Matteson, Alice Bell	Petaluma	Math. 152	54 Roble
Maurer, Mildred Leanor	Alameda	Engl. 15	Madrono
[1]May, Earl Leslie	Los Angeles	M. E. ‡3	SigmaAlphaEpsilon
Mayberry, Beatrice	Alhambra	Math. ‡32	Sigma Kappa
Maynard, Elizabeth Stanley A. B., Stanford, 1917.	San Jose	Hist. gr.	26 Roble
Maynard, Merlin T. R. Dacre	San Jose	Phyl. 60	16 Encina
[1]Mayock, Welburn Franklin A. B., Stanford, 1917.	Gilroy	Law gr.	402 Encina
Mead, Myron Wheelock	Pasadena	Econ. 13	El Camino
Meese, Gilbert Haven	Sacramento	M. E. 49	220 Encina
Meh, William Chauncey	Canton, China	M. E. 10	405 Emerson
[1]Meinhard, Arthur R.	New York, N. Y.	Med. Sp. 148	Delta Tau Delta
Melcher,MargaretSybil A. B., Smith, 1916.	New York, N. Y.	Bact. gr.	Alvarado Hall
[2]Meling, Arthur Evan	Chicago	Econ.‡	Delta Upsilon
[1]Mellenthin, William	Aberdeen, S. D.	Econ. ‡12	Alpha Tau Omega
Mendel, Frank	Campbell	M. E. 65	528 Encina
[2]Mensor, Merrill Coleman	SanFrancisco	Chem. 48	510 Encina
Merrill, Paul Carver	Los Angeles	Chem. 159	Alpha Sigma Phi
[2]Merritt, Mildred Maurine	Woodland	Hist. ‡	Madrono
Mertz, Maximilian Hawley	Ontario	Econ. 58	Beta Theta Pi
[1]Messenger, Ivan Rush	Jamul	Span. 101	307 Encina
Metcalf, Stanley C.	Santa Barbara	C. E. 64	46 Encina
Metzler, David Russell	Los Gatos	Hist. 108	415 Encina
[2]Metzler, John Adam, Jr.	Palo Alto	Chem. ‡	936 Waverley-p
Metzler, William Herman	Los Gatos	Law 111	415 Encina
Meyer, Eibe Hinrich	San Francisco	Chem. 13	650 Waverley-p
[1]Meyers, Robert Koehler	Tulare	Law 146	346 Encina
Mickle, Aileen Josephine	Centerville	Span. 151	Madrono
Miller, Charles Hontz	Huntingdon, Pa.	Econ. ‡14	250 Encina
Miller, Elgie Elspeth	San Francisco	Econ. 13	Pi Beta Phi

[2]Miller, Eugene Elliott	Hollywood	Geol. ‡	307 Encina
Miller, Frank Robert A. B., Stanford, 1918.	Los Angeles	E. E. gr.	Alpha Sigma Phi
[2]Miller, Gertrude Lucille	Los Angeles	Econ.	Roble
Miller, Hyman	Los Angeles	Eact.-Med. 156	329 Encina
Miller, John S., Jr.	Huntington Park	PreL. 54	421 Encina
Miller, Lowell Morrison	Palo Alto	Hist. 16	580 Addison-p
Miller, Mabel Alta A. B., Stanford, 1917.	Dinuba	Engl. gr.	638 Channing-p
Miller, Mary Elizabeth	Ocean Park	Educ.-G. A. 10	Alvarado Hall
Miller, Mildred Anna	Seattle, Wn.	Fr. 49	Delta Gamma
Miller, Raymond B.	Terre Haute, Ind.	Econ. 148	Manzanita Hall-p
Miller, RussylEllwood	St. Anthony, Ida.	Chem. 44	Theta Xi
[1]Miller, Wayne Leslie	Palo Alto	Law 170	580 Addison-p
Mills, Russell Holbrook	El Paso, Tex.	Chem. 15	22 Lasuen
Minehart, Velear Leroy A. B., Washington and Jefferson, 1902.	Oakland	Med. gr.	32 Middle, SF-sf
Miner, Elliott Steele	Cupertino	Econ. 54	Cupertino-c
[1]Minssen,HermanFrederick A. B., Stanford, 1916.	Sterling,Ill.	Educ. gr.	731 Hedding,SJ-sj
Mirk, Margaret Henderson	San Mateo	Hist. 14	55 Poplar, SM-sm
[1]Mitchell, Emery Ferguson	Belvedere	PreL. 61	Phi Kappa Psi
Mitchell,HobartMcKinley	Portland,Ore.	PreL. 81	346 Encina
Mitchell, Homer Irving	Los Angeles	Hist. 15	Theta Delta Chi
Mitchell, Jean	San Mateo	Lat. 14	38 Roble
[2]Miyagi, Otogoro Imperial University, Tokyo, 1908.	Sendai, Japan	M. E. gr.	232 Lytton-p
Moise, Elsie Harriett	San Francisco	Span. 36	Delta Delta Delta
Molloy, Alice Kathryn	Palo Alto	Engl. 40	500PaloAltoAve-p
[1]Mollring,EdwinForest	Newcastle,Wyo.	Econ.	660 Waverley-p
Monroe, Merton Keith	Monrovia	PreL. 34	Alpha Delta Phi
Montague, Richard Aga	Reedley	Chem. 55	322 Encina
Montalban, Heraclio	Iloilo, Iloilo, P. I.	Educ. 70	1080 Emerson-p
Montgomery, Dorothy	Kansas City, Mo.	Fr. 124	Alpha Phi
Montgomery, Robert Bruce	San Jose	Phil. 61	220 S. 8th St., SJ-sj
Moore, George Thomas	Berkeley	PreL. 56	Alpha Sigma Phi
Moore, James Eugene, Jr.	Spokane, Wn.	M. E. 60	Alpha Sigma Phi
Moore, Marguerite	San Jose	Hist. 134	416 S.6th St.,SJ-sj
Moore, Neil Preston A. B., Stanford, 1914, A. M., 1915.	Palo Alto	Chem. gr.	564 Hamilton-p
Moore, Sidney Fremont A. B., Stanford, 1917.	Monrovia	Engl. gr.	12 Roble

Moore, William Homer	Selma	Med. gr.	2402 Calif., SF-sf
A. B., Stanford, 1915.			
[1]Moors, Harry William	Apia, Samoa	C. E.	141 Encina
[1]Morgan, Raymond	Centerville, Ind.	Phys. gr.	246 Encina
A. B., Indiana, 1916; A. M., Stanford, 1917.			
Moritani,Tomikichi	Okayama-Ken,Japan	Econ. 94	733 Ramona-p
Mork, Donald James	Mountain View	Phys. 82	319 Encina
Morris, John Knox, Jr.	Cloverdale	Phyl. 68	220 Encina
Morris, Leland Charles	Denver, Colo.	Educ. ‡16	500 Encina
[2]Morrison, Frances Elizabeth	Palo Alto	Zool.	454 Homer-p
Morrison, Katherine Virginia	Winters	Engl. 12	Alpha Phi
[1]Morse, Herbert Kennedy	Dinuba	Geol. 26	531 Cowper-p
Mosey, Helen D.	Evanston, Wyo.	Educ. ‡60	51 Roble
Mosher, Helen Louise	Los Angeles	Educ.-G.A. 15	KappaKappaG.
Mosiman, Floyd W.	Aberdeen, S. D.	Econ. 105	Alpha Sigma Phi
Moulton, Everts	Los Angeles	Econ. 60	DeltaKappaEpsilon
Moy, Hymn	San Francisco	Chem. sp. 47	431 Lytton-p
[2]Muchenberger, Leanna M.	S'ta Monica	Fr.	52 Roble
Mueller, Albert Venlow	Lincoln	Hist. 15	548 Encina
Mugg, Fred Hodge	Fresno	M. E. 13	317 High-p
MukaiyamaMasahachiP.	Hiroshima,Jap.	M. E. gr.	733 Ramona-p
A. B., College of the Pacific, 1914; A. M., Stanford, 1916.			
Mulford, Grace Eudora	Los Angeles	Eng. 114	Sigma Kappa
[1]Murphy, Daniel William	Oakland	Phyl. gr.	335 Lytton-p
A. B., Catholic University of America, 1914.			
Murphy, Joe Thomas	Tonopah, Nev.	PreL. 60	315 Encina
Murphy, Roy Francis	Manitowoc, Wis.	Phyl. 14	19 Encina
Murphy, William Henry	Palo Alto	Chem. ‡8	735 Homer
Murray, Emily Southwell	Hanford	Engl. 107	1019 Bryant-p
[1]Murray, Minerva	Palo Alto	Greek 48	1019 Bryant-p
Musser, Edgar Hale	Los Angeles	Geol. 66	Alpha Delta Phi
NadelhoffermayneM.	DownersGrove,Ill.	Chem. 96	Chi Omega
[2]Nagel, Else Helen	Palo Alto	Econ. 99	356 Addison-p
Nagel, Gunther W.	Palo Alto	Med. gr.	356 Addison-p
A. B., Stanford, 1917.			
Nagel, Margaret	Los Altos	Ed.-G.A. 97	Los Altos-la
Nagel, Otto Arno	Palo Alto	PreL. 34	356 Addison-p
[1]Nakabayashi, Koshiro	Tokyo, Japan	M. E. 38	Japanese Club
Narvestad,OlgaMarguerite	Portland,Or.	Hist. 151	Delta Delta Delta
[1]Nathan, Robert F.,Jr.	New York, N.Y.	Law gr.	21 Salvatierra
A. B., Southern California, 1917.			
Nathanson, Norman Jesse	San Jose	Econ. 14	70 Stockton, SJ-sj

[1]Needham, Chauncey Everett	San Diego	Law ‡52	Delta Chi
[1]Needham, H. Parke	Los Angeles	C. E. ‡10	660 Waverley-p
[2]Nelson, Ina May	San Jose	Math ‡	382 Minnesota,SJ-sj
[1]Newcastle, Charles C.,Jr.	Portland, Ore.	Econ. gr.	Sigma Chi
B. S., Oregon, 1917.			
Newland, Harvey Edward	Los Angeles	Chem.‡10	Kappa Sigma
Newman, William, Jr.	Fresno	Chem. 11	538 Encina
Newsom, John Branner	Palo Alto	Geol. 58	118 Encina
[2]Niebel, Herbert Lee	Palo Alto	Med. gr.	481 University-p
A. B., Stanford, 1914.			
Nielsen, John William	San Francisco	Med. gr.	2730 Sac'to, SF-sf
A. B., Washington State College, 1911.			
[1]Nishikawa, Shoji	Tokyo, Japan	Phys. gr.	405 Emerson-p
(A. B.) Imperial University, Tokyo, 1910, (Ph. D.), 1916.			
Nishimura, Hatsutaro	Palo Alto	M. E. 174	1061 Bryant-p
Nisson, Estelle Geneva	Santa Ana	Econ. 152	Chi Omega
Nisson, Roy Byron	Potter Valley	Econ. sp. 14	175 Webster-p
Nix, Armin	Stanford Univ.	Engl. ‡79	Stanford Union
Noack, Thea	Sacramento	Psych. 84	Alpha Phi
Noble, Margaret Lorain	Los Angeles	Math. 13	Chi Omega
Nordmann, Bernhard Fred.	Sacramento	Hist. gr.	245 Ramona-p
A. B., Stanford, 1917.			
Noyes, Lyman Wells	Provo, Utah	Med. 143	847 Bryant-p
[1]Nukiyama, Heiichi	Numadzu, Japan	E. E. gr.	232 Lytton
Imperial University, Tokyo, 1913.			
Oberlé, Eugene Jean	Palo Alto	Fr. gr.	611 Bryant
A. B., Stanford, 1915, A. M., 1916.			
Odenheimer, Marguerite	Los Angeles	Econ. 150	Alpha Omicron Pi
[2]Ogata, Daizo	Fukuoka, Japan	Phyl. gr.	405 Emerson-p
M. D., Kyushi Imperial University, 1911.			
Ogden, Edith Maples	Bakersfield	Hist. 126	Alpha Phi
[2]Okamoto, Harumi	Otaru, Japan	Econ. ‡	Japanese Club
O'Keefe, M. Ethel	Menlo Park	Span. 15	Menlo Park-mp
Okuma, Genzo	Okinawa, Japan	C. E. 79	Japanese Club
[2]Olcese, Zeta Jeannette	Merced	Econ. ‡	KappaKappaGamma
Oliveira, Joseph	Arroyo Grande	Chem. 11	335 Encina
[1]Oliver, Henry McRae	Los Gatos	Geol. 67	Theta Delta Chi
[1]Oliver, Robert Watson	Los Angeles	Law 116	Delta Upsilon
Olmsted, Margaret Stanley	Los Angeles	Bact. 158	KappaAlphaTheta
[2]Olsen, Delta Ross	San Francisco	Med. gr.	2402 Calif.,SF-sf
A. B., California, 1916.			
Onserud, Helen Andrine	Spokane, Wn.	Bact. 58	Delta Delta Delta
Orcutt, Gertrude Logan	Los Angeles	Fr. 13	Kappa Kappa Gamma

[1]Organ, William Robert	Palo Alto	Phys. 133	454 Forest-p
Ormsby, Walter Arvin	Martinez	Hist. 15	543 Encina
Oshima, Masamitsu Imperial University, Tokyo, 1908.	Taihoku, Japan	Zool. gr.	305 Lytton-p
[1]Ostrander, Frank Merced	Palo Alto	Law sp. 95	271University-p
Ostrander, Ray Wellington	Ceres	Econ. 107	13 Encina
Ostroff, Robert Allison A. B., Nevada, 1915.	San Francisco	Med. gr.	S. F. Hosp.,SF-sf
Ott, Kathryn George	Palo Alto	Econ. 60	Chi Omega
[2]Otter, Gladys Louise	San Jose	Zool.	137 N. 6th, SJ-sj
[1]Overton,Sam'lWatkins A. B., Carroll, 1916.	Waukesha,Wis.	Law gr.	660 Waverley-p
[1]Owen,William McDermott	Hollywood	PreL. 51	DeltaKappaEpsilon
[2]Owen, William Wallace	Palo Alto	Bot.	151 Addison-p
Oyama, Takehiko	Los Angeles	Econ. 54	Japanese Club
Oyama, Yutaka	Kagawa-Ken, Japan	Phyl. sp. 54	839 Emerson-p
Page, Mabel Lucy	Pasadena	Hist. 68	62 Roble
Pai, Hu Wei	Kulangsu, Amoy, China	C. E. 157	363 Melville-p
[2]Pann, Edwin Huff	Huntington Beach	M. E. 85	247 Encina
Pardee, Starr Carlton	Riverside	M. E. 64	Kappa Alpha
Park, Lois Kentfield	San Francisco	Phyl. 58	Delta Delta Delta
[1]Parker, Juanita May	Redwood City	Engl. 3	320 Elm, RC-rc
Parker, Melvin Francis	Stockton	Chem. 8	Sigma Chi
[2]Parks, Benjamin Stanley	Los Angeles	Law ‡	Sigma Alpha Epsilon
Parks, Clarence Elbert	Stockton	Chem. 53	Phi Kappa Sigma
Parrott, James Clifford	Twin Falls, Ida.	Med. ‡	2123 Calif., SF-sf
Parsons, Clarence Wilbur	Lost Hills	Geol. 150	228 Encina
[2]Parthum,EdwardFred'k	Phoenix,Ariz.	Chem. 138	Theta Xi
Patacsil,LucasMallare	Banang,Un'n,P.I.	M. E. 71	2 Lasuen
Patrick, John Clarence	Palo Alto	Ent. 15	305 Lytton-p
Patterson, Edith Adeline	San Jose	Zool. 104	Sigma Kappa
Patterson, Thomas Shaw	Berkeley	Engl. 155	503 Encina
[2]Patton, Elizabeth Allen	Los Angeles	Hist.	Roble
Paulsen, Abby Belle	Palo Alto	Engl. 148	602 Waverley-p
Pauly, Irene Margaret A. B., Stanford, 1918.	Hebron, Colo.	Physics gr.	54 Roble
[2]Payne, Frances Marshman	Santa Rosa	Engl. ‡	14 Roble
Peacock,HowardGreenwood	LongBeach	M. E. 153	512 Encina
Pearce, Cecil Edward	Lodoga	C. E. 14	Encina Gym
Peck, Maybelle Claire A. B., Stanford, 1917.	Compton	Ed.-G.A. gr.	Alpha Phi
Pehl, Earl W. C.	Upland	M. E. 119	308 Encina

Pehrson, Elmer Walter	San Jose	Geol. 158	347 Encina
Pennington, Thomas Edmund	Belmont	Chem. 71	Belmont-b
[2]Perham, Don De Blois	Palo Alto	Hist.	335 Melville-p
Perkins, Russell Chamberlain	Seattle, Wn.	Econ. 7	Delta Kappa Epsilon
[2]Perry, Harold C.	Albuquerque, N. M.	Econ. ‡	236 Encina
Perry, Harold Elbert	Fresno	Econ. 13	173 Lytton-p
Petersen, Edna Thelma	Santa Barbara	Ed.-G.A. 27	910 Ramona-p
Petersen, Henry Edward	Richfield, Utah	Chem. 107	Theta Xi
Petrini, James	Bakersfield	Econ. 14	121 Encina
Pettingill, Henry S., Jr. A. B., Stanford, 1918.	Los Angeles	C. E. gr.	Beta Theta Pi
Pettit, Albert Victor A. B., Stanford, 1915.	San Francisco	Med.gr.	2531 Wash'gtn, SF-sf
Phegley, Marida Melvin	Palo Alto	M. E. 8	628 Hamilton-p
Phelps, Clarence Lucien A. B., Stanford, 1909.	Palo Alto	Educ. gr.	261 Homer-p
Phelps, Walter W.	Riverside	Econ. 15	Beta Theta Pi
Phillips, Joseph Leslie, Jr.	Los Angeles	Econ. 61	Delta Tau Delta
Pickering, Leland Lennell	Fullerton	Pre L. 60	Kappa Alpha
[1]Pierce, Frederic Ross	Sacramento	Pre L. 28	Phi Gamma Delta
Pillsbury, Stirling Gainer	Long Beach	Phyl. 69	320 Encina
Pino-Suarez, Alfredo	Merida, Yuc., Mex.	Phyl.	620 Waverley-p
Piper, Elsie Ford A. B., Nebraska, 1904.	Lincoln, Neb.	Hist. gr.	Alpha Omicron Pi
Pison, Glicerio T.	Molo, Iloilo, P.I.	Chem. 16	6 Alvarado
Platt, Lawrence Townley	Pasadena	Econ. 9	Phi Delta Theta
Plummer, Dorothy Marie	Centerville	Engl. 91	Alpha Phi
Poindexter, Harold Boyd	Long Beach	Chem. 13	555 Encina
[1]Porter, Thomas Henry	Ingot	Hist. 16	11 Salvatierra
Post, Gladys Myrtle	Tacoma, Wn.	Ger. 76	1035 Forest Court
Potter, John Alfred, Jr.	Los Angeles	Phys. 107	547 Encina
Pouppirt, Pearl Sylva	Tulare	Hist. 15	Chi Omega
Preston, Flora May A. B., Stanford, 1917.	Palo Alto	Hist. gr.	626 Everett-p
[1]Preston, Ila Johnston	San Jose	Fr. 127	Alvarado Hall
[2]Preston, Mary Isabel	Santa Clara	Educ. ‡	Alvarado Hall
Price, Harold Gordon	Payette, Ida.	Econ. 14	407 Encina
Price, Oliver Settle	Campbell	Econ. 15	208 Encina
Price, Verona Violet	Palo Alto	Econ. 145	602 Webster-p
Prior, Frank Oscar	Escondido	M. E. 145	332 Encina
Pritchard, Walter Ferris A. B., Stanford, 1917.	Colton	Med. gr.	119 Encina

Proctor, William Martin A. B., Whitman, 1901, A. M., 1906; A. M., Stanford, 1916.	Los Altos	Educ. gr.	Los Altos-la
[1]Provis, Ethel A. B., College of the Pacific, 1916.	Grass Valley	Engl. gr.	Sigma Kappa
Puls, Louis George	Clinton, N. Y.	Math. ‡ 17	303 Hamilton-p
Pun, Ying Lam	Kwai Ping City, China	Chem. 147	405 Emerson
[1]Purdy, Donald Frederick	Dawson, Y.T.	M. E. 138	223 Encina
Quarton, Dale	Anaheim	M. E. 67	Theta Xi
Quinn, Emmett A.	Grand Junction, Colo.	Econ. 11	Phi Gamma Delta
Radcliffe, Thomas Drew	Birmingham, Ala.	Geol. 64	400 Encina
Rakestraw, Norris Watson A. B., Stanford, 1916, A. M., 1917.	Los Angeles	Chem. gr.	219 Encina
Ramirez, Joaquin Belza	Manila, P. I.	Span. 116	3 Alvarado
Ramsey, Bessie Louise	Billings, Mont.	Econ. 152	28 Roble
[1]Rand, Gerald Stevenson	Vancouver, B.C.	Econ. 90	El Camino
Randall, Charles Edgar, Jr.	San Jose	Econ. 71	421 Encina
Rathbun, Florence Irene	Mayfield	Engl. 15	Mayfield-p
[1]Rayon, Margaret Scott	Oakland	Engl. 40	Xazmin House
Redwine, Wendell Earle	Riverside	Law 96	Delta Chi
Reed, Maurice	Clarksburg, W. Va.	Econ. 6	Sigma Alpha Epsilon
Reeher, Max Moore	Forest Grove, Ore.	Ent. 159	39 Encina
Rehm, Leonard Joseph	Sonora	Econ. 108	410 Encina
Reid, Robert Henry, Jr.	Los Angeles	Bot. 16	355 Encina
Reilly, Hubert Bernard	Portland, Ore.	Chem. 147	405 Encina
Reinhold, Lisle Wainwright	Montrose, Col.	Chem. 13	Delta Upsilon
[1]Reinke, Al Reinholt	Long Beach	C. E. 4	450 Encina
Reinke, Benjamin Clarence	San Francisco	Phyl. 97	352 Encina
Repath, Charles Jasper	Los Angeles	M. E. 12	Delta Upsilon
[2]Retterrath, Oma Lillian	Williams	Math. ‡	84 Roble
Reyburn, Ellna	Mountain View	Hist. 108	Mountain View-mv
Reynolds, James McPherson	Pomona	Econ. 11	Theta Delta Chi
Reynolds, Lloyd Robinson A. B., Stanford, 1915.	Upper Lake	Med. gr.	2402 Calif., SF-sf
Rhodes, Bernice	Chino	Bact. 110	Alvarado Hall
Rhodes, Joseph Paul	Dinuba	M. E. 15	209 Encina
Rhodes, Mason Marion	Reno, Nev.	Chem. 60	210 Encina
Rich, Willis Horton A. B., Stanford, 1909.	Lancaster	Zool. gr.	University Park
[1]Richards, Lloyd Sidney	Campbell	M. E. 12	110 Encina
[1]Richards, Roy Lee	Prescott, Ariz.	Econ. 155	344 Encina
Richardson, Willoughby P. A. B., Stanford, 1917.	Portland, Or.	Med. gr.	Alpha Sigma Phi

Richter, Charles Francis	Los Angeles	Chem. 83	138 Encina
Richter, Margaret Rose A. B., Stanford, 1917.	Los Angeles	Engl. gr.	4 Madrono
Ricker, Belle Bernice A. B., College of the Pacific, 1917.	Campbell	Ger. gr.	Mirada ave.
Ridder, Harold Ferdinand	Long Beach	M. E. 159	405 Encina
[1]Righter, Cornelius Erwin	Campbell	Hist. 103	348 Encina
Riley, Thelma Marie	Colton	Hist. 150	Alpha Phi
Ritchie, Kenneth Sinclair	Portland,Ore.	Chem. 15	Hotel Palo Alto-p
Robbins,AlbertCulbertson	Los Angeles	Chem. 77	Delta Upsilon
Robbins, Donald Thorley	Los Angeles	M. E. 118	Alpha Tau Omega
Robbins, Wesley Eugene	Portland,Ore.	Engl. 152	237 Encina
Roberts, Holly Helen	Los Angeles	Fr. 16	Alpha Omicron Pi
Roberts,MargueriteLennis	LosAngeles	Fr. 15	Alpha Omicron Pi
Robertson, Margaret M.	Redwood City	Fr. 17	5 Jefferson, Redwood-r
[1]Robinson, Geroid	Asheville, N. C.	Hist. 163	527 Encina
Robinson,JohnHenry,Jr.	Prescott,Ariz.	M. E. 52	344 Encina
Robinson, John Randall	Hayward	Hist. 15	Kappa Sigma
Rochfort, Marie Caroline	San Anselmo	Hist. ‡47	Alpha Omicron Pi
Rockwell, John	Hubbard, Neb.	Educ. 142	375 Hawthorne-p
[1]Rogers, Hattie Ethelyn A. B., College of the Pacific, 1909.	San Jose	Engl. gr.	117LenzenAv.,SJ-sj
Rogers, Helen Frederica	Lucas, Ia.	Hist. 152	31 Roble
Rogers, Lloyd Everett	Ventura	Econ. 15	Phi Kappa Sigma
Rogers, Marion Llewellyn	Long Beach	Econ. 62	Delta Delta Delta
Rogers, Robert Greene	San Jose	Phyl. 37	Delta Upsilon
[1]Roney, Guy Joseph A. B., Stanford, 1917.	Placentia	Hist. gr.	Kappa Sigma
Roome, Mildred Florence	Los Angeles	Span. 137	Alpha Phi
Roosman, Paul Ferdinand	Kingsburg	Chem. 16	408 Encina
Rossiter, Grace	Portland, Ore.	Ger. 150	Kappa Alpha Theta
Roth, Earl Frederick A. B., Stanford, 1916.	Willits	Med. gr.	2402 Calif., SF-sf
Roth, Marian Helen	Los Angeles	Psych. 51	Delta Delta Delta
Roush, Lucile Bertha	Stanford Univ.	Bot. 153	Cedro Cottage
Royden, George Taylor A. B., Stanford, 1917.	San Mateo	E. E. gr.	419 Encina
Royden, Herbert Nathan, Jr.	San Mateo	M. E. 64	419 Encina
Rugg, Ethel Dickinson	Berkeley	Fr. 150	Chi Omega
Russell, Dennison Alexander A. B., Stanford, 1917.	Palo Alto	Phil. gr.	1325 Cowper-p
Russell, Donald Joseph	San Leandro	C. E. 13	Delta Tau Delta

[1]Russell, Elizabeth A. B., Stanford, 1917.	Kansas City, Mo.	Math. gr.	12 Roble
Russell, James Lowell	Fullerton, Neb.	Econ. 13	541 Cowper-p
[1]Russell, Lloyd Luzon	Wilmington	Econ. 13	Encina Gymnasium
[1]Russell, William Otis	Pomona	Law 154	Kappa Sigma
[1]Rutledge, Ralph Winston	Colusa	Hist. 13	Delta Tau Delta
Ryan, Marguerite California	San Jose	Hist. 165	63 Roble
[1]Sales, John Paul	Petaluma	PreL. 63	Kappa Sigma
Salzberg, Edward B.	Michigan City,Ind.	Econ. 70	19 Encina
Samis, Milton Francis	Greenfield	Econ. sp. 48	Theta Delta Chi
[1]Sample, Fillmore Collins	Fresno	Phyl. 128	SigmaAlphaEpsilon
Sampson,Joseph Abraham B. S., California, 1910.	SanFrancisco	Med. gr.	220 Emerson-p
Sanborn, Ethel Ida A. B., South Dakota, 1904, A. M., 1907.	Eugene, Ore.	Bot. gr.	Alvarado Hall
[1]Sanborn, Lewis Hampton	Benicia	Phyl. 108	420 Encina
[1]Sanden, Eugene Stuart	Helena,Mont.	Law 139	532 Encina
Sanford, Dudley Phelps	San Jose	Phyl. 15	274 S. 13th, SJ-sj
Sappington, Clarence Olds A. B., Whitman, 1911.	Lodi	Med. gr.	2102 Calif.,SF-sf
Say, Harry Leslie	Fresno	Law 145	225 Encina
Sayre, Crystal A. B., Stanford, 1917.	Tulare	Math. gr.	Chi Omega
Sayre,Ruby	Tulare	Ed.-G.A. 8	Chi Omega
Schaper, Edward Andrew A. B., Puget Sound, 1917.	Tacoma,Wn.	Med. gr.	532 Encina
Schaufelberger,WilliamM.	Hastings,Neb.	Chem. 165	219 Encina
[1]Scheeline, Claire Jeanette	Menlo Park	Phil. 8	Menlo Park-m
Schein, Sidney	San Jose	Chem. 162	347 Encina
Schilling, Dorothy Cecelia	Palo Alto	Engl. 56	551 Lytton-p
Schlesinger,LauraAnderson	LosAngeles	Engl.127	KappaKappaGamma
Schmitz, Victorine Annette	Los Angeles	Ger. 168	59 Roble
Schnier, Jack Preston	San Francisco	C. E. 58	Stanford Park
[1]Schofield, Martha Nickerson A. B., Stanford, 1915.	Palo Alto	Sc. Ed. gr.	751 Channing-p
Schulz, Nellie Gertrude	Porterville	Econ. 99	21 Roble
Schumacher, John	Los Angeles	Econ. 16	Phi Gamma Delta
Schwartz, Gustav Sutro	San Francisco	Ger. 66	429 Encina
Schwarzenbek,Francis X.	San Francisco	Geol. 161	334 Encina
Scofield, Frank Alson A. B., Stanford, 1913, A. M., 1914.	Dunnigan	Educ. gr.	1221 Webster-p
Scofield, Norman McCray	Sunnyvale	M. E. 12	Sunnyvale-s

[2]Scott, Edith F. Wilburn	Pomona	Econ.	39 Roble
Scott, Hamlet Woodburn	Oakland	Law 90	Alpha Delta Phi
Scott, Lorin Marcellus	Los Gatos	M. E. 13	62 Encina
Scudder,KathreenVirginia	Oxford,Ohio	Greek 168	55 Roble
Seaman,Wesley Albert	Marshfield, Ore.	Hist. 15	556 Encina
Searcy, Ruth Isabelle	Durango, Colo.	Engl. 63	30 Roble
Sebastian, Charles Francis	Los Angeles	Med. ‡13	427 Encina
Secker, Georgia Pearl	Fresno	Lat. 151	437 Kipling-p
Seely, Claire Randolph	Medford, Ore.	Phyl. 56	Phi Kappa Sigma
Seemann,CarmenAnalouise	Sacramento	Ger. 62	Gamma Phi Beta
Seitz, Roland Peter	San Francisco	Phyl. 109	435 Encina
Sentous, Alvin A.	Los Angeles	Econ. 14	DeltaKappaEpsilon
Sewall, Russell Williams	Portland, Ore.	PreL. 69	Chi Psi
Seymour, Doris Margaret	Palo Alto	Engl. 153	828 Cowper-p
[1]Seymour, Dorothy A. B., California, 1916.	Sacramento	Sc. Ed. gr.	828 Cowper-p
Seymour, Mary Dorothy	Los Angeles	Engl. ‡8	Madrono
Shamberger, John Philip	Payette, Ida.	Econ. 103	13 Encina
Shamberger, Ralph Julian	Payette, Ida.	Econ. 14	31 Encina
Sharp, Baxter Rice	San Francisco	Econ. 13	25 Salvatierra
Sharp, Helen Elizabeth	Atherton	Phyl. 61	951 Hamilton-p
Sharp, John Chester	Palo Alto	Phyl. 11	El Camino
Shedd, Margaret Cochran	Los Angeles	Econ. 66	Alpha Phi
Sheldon, Willard Hooker	Palo Alto	PreL. 38	851 University-p
Shelton, Bob Grandfield	Los Angeles	Hist. 130	Pi Beta Phi
Shepardson, Dwight Emerson A. B., Stanford, 1917.	Fullerton	Med. gr.	119 Encina
Shepherd, Harold	Paris, Ida.	Law. 133	El Camino
Sherer,GertrudeRoberts B. L., Smith, 1901; A. M., Stanford, 1917.	Worcester,Mass.	Engl. gr.	Alvarado Hall
Shibata, Frank S. A. B., College of the Pacific, 1917.	Tokyo, Japan	Phil. gr.	733 Ramona-p
Shlaudeman, Karl Whitman	Pasadena	Engl. 64	Chi Psi
[1]Show, Joseph Henry	Palo Alto	M. E. 41	353 Melville-p
Simmons, Josephine Osmond	Palo Alto	Econ. 15	625 Hamilton-p
Simon, Dewey Oscar	Ely, Nev.	Econ. 13	138 Encina
Simonds, Sarah Louise A. B., Stanford, 1916.	Los Angeles	Med. gr.	2321 Sac'to,SF-sf
[1]Simpson, Beverly	San Francisco	Phyl. 105	227 Encina
Simpson, Carolyn Elen A. B., Stanford, 1917.	Palo Alto	Engl. gr.	667 University-p
Simpson, Helen McDougall	San Jose	Ed.-G.A.149	142 N.3rd.,SJ-sj

Simpson, John Edwin C.	Bakersfield	Chem. 14	121 Encina
Simpson, Matthew Cheney	Long Beach	Econ. 15	Alpha Sigma Phi
Simpson, Stewart	San Francisco	Phyl. 11	305 Encina
Single, Ruth Lydia	Stockton	Econ. 7	Madrono
Sischo, Doris Jeanette	San Fernando	Fr. 13	66 Roble
[1]Slattery, James Ward	Mountain View	C. E.	362 Encina
[2]Sloman, Frank Henry	San Francisco	Phyl. 39	Kappa Alpha
Sloss, Leon, Jr.	San Francisco	Fr. 35	429 Encina
Small, Edwin Warren	Palo Alto	M. E. 10	921 Scott-p
[1]Smalley, William Denney	Pasadena	Law ‡66	Phi Gamma Delta
Smith, Aubrey Miller	Chico	E. E. 57	403 Bryant-p
[2]Smith, Dorothy	Washington, D. C.	Hist.	51 Roble
[2]Smith, Edwin Oscar	San Jose	Psych. gr.	904WillowG,SJ-sj
A. B., McKendree College, 1908, A. M., 1909.			
Smith, Emily Violet	Los Altos	Chem.113	Bx.536,R.A,Mt.V-m
Smith, Florence Madeline	Los Altos	Econ.15	Bx.536,R.A,Mt.V.-m
Smith, Forster Rand	Palo Alto	PreL. 71	43 Encina
Smith, Lewis Anderson	Pearce, Ariz.	Geol. 13	Theta Xi
Smith, Martha Emily	Los Angeles	Econ. 63	59 Roble
Smith, Mary Norris	Palo Alto	Engl. 14	1335 Cowper-p
[2]Smith, Phoebe Marcella	Los Angeles	Econ.	87 Roble
Smith, Reuel E.	Boise, Ida.	M. E. 15	140 Encina
[1]Snedaker,JohnFrederick,Jr.	Ogden,Utah	Phyl. 3	Stanford Union
Snell, Kenneth Alfred	San Francisco	M. E. 162	Los Altos-l
Snyder, Howard Ogier	Denver, Colo.	M. E. 141	330 Encina
Sparks, James Alsworth	Sierra Madre	PreL. 40	203 Encina
[1]Sproles, Harris Brownlee	Los Gatos	Econ. 5	Sigma Alpha Epsilon
Sprott, Mary Esther	Porterville	Hist. 67	Gamma Phi Beta
Spurlock, Horace Eldred	Covelo	Geol. 13	110 Encina
Squire, Edwin John	Claremont	C. E. sp. 32	205 Encina
Squire, Helen Richardson	Palo Alto	Greek 16	900 University-p
Squire, Ruth Hortense	Palo Alto	Engl. 150	900 University-p
Squires, Anita Marian	Palo Alto	Math. 66	Roble
Stadt, J. Milton	Orange City, Ia.	M. E. 151	Sigma Chi
Stamp, Wade Moore	Long Beach	Econ. 76	320 Encina
Stanford, Mabel Ayretta	Claremont	Engl. gr.	Madrono
A. B., Pomona, 1917.			
[1]Stanley, Herbert Mark	Palo Alto	Geol. gr.	269 Hawthorne-p
A. B., Stanford, 1917.			
Stanton, Elna Cecelia	Avalon	Engl. 16	Madrono
Stark, Herbert Spencer	Palo Alto	M. E. 11	1020 Ramona-p

Stark, Marguerite Dare A. B., Stanford, 1917.	Palo Alto	Engl. gr.	1020 Ramona-p
Starkey, Charles Ward	Whittier	Chem. 59	El Camino
[1]Starkey, Harold B.	San Diego	Law 106	Chi Psi
[2]Stauf, Ida A. B., Stanford, 1910, A. M., 1912.	Palo Alto	Fr. gr.	1029 Ramona-p
Stearn, Noel Hudson A. B., Stanford, 1918.	St. Louis, Mo.	Engl. gr.	326 Encina
von Stein, Mary Gertrude	Chino	Math. 110	84 Roble
Steinbrunn, Wilhelm C. A. B., California, 1913, A. M., 1914.	Berkeley	Ger. gr.	330 Waverley-p
Steineke, Max	Brookings, Ore.	Geol. 15	28 Alvarado
Steiny, Homer J.	Stockton	Geol. 145	Zeta Psi
Stevens, Harold Remington	Victoria, B.C.	Engl. 159	17 Encina
Stevens, Russell Brennan	Healdsburg	Hist. 93	El Camino
Stevick, Nana	Berkeley	Eng. 128	KappaKappaGamma
Stewart, Gwendolyn A. B., Stanford, 1900.	Seattle, Wn.	Med. gr.	1344 Jackson, SF-sf
Stewart, Hugh	Escondido	M. E. 125	332 Encina
Stewart, John Speaker	Los Angeles	Econ. 151	222 Encina
[1]Stewart, Marian Bernice	Stockton	Ed.-G.A. 40	Madrono
[2]Stewart, Wm. Lyman, Jr.	Lamanda Park	Chem. 22	Beta Theta Pi
[2]Stipp, Thomas Franklin	Ukiah	Geol.	32 Encina
[1]Stocklmeier, Adele Irmler A. B., Stanford, 1918.	Cupertino	Ed.-G. A. 180	Cupertino-c
Stocklmeier, Alfonso J.	Cupertino	C. E. 88	Cupertino-c
Stockton, James Leroy A. B., Columbia, 1906, A. M., 1907.	Winona, Minn.	Educ. gr.	335 Lytton-p
Stoddard, Dower Kenneth, Jr.	Merced	Econ. 13	Delta Upsilon
Stoddard, Jeanne	Merced	Hist. 147	Alpha Omicron Pi
Stolz, Harry Phillip	San Francisco	Geol. 12	Theta Xi
[2]Stoneman, Ethel Turner A. B., West Australia, 1916; A. M., Stanford, 1917.	Perth, W. Aust'a	Psych. gr.	433 Melville
[1]Storck, John Philip Wigge	Ft. Michie, NY	Greek 109	127 Encina
Stote, Helen Marshall	Colo. Spgs., Colo.	Engl. 16	56 Roble
Strain, Herbert Gerald	Palo Alto	M. E. 17	667 Channing-p
[2]Strawser, Helen Ruth	San Bernardino	Ed.-G. A. ‡	Madrono
Streichan, Paul Herman A. B., California, 1915.	San Francisco	Med. gr.	2095 Bush, SF-sf
[2]Strickler, Martha Marguerite	Holtville	Span.	Chi Omega
[2]Strong, Elizabeth	Albuquerque, N.M.	Engl. ‡	65 Roble
Sturgeon, John A. H.	Monrovia	Pre L. 48	539 Encina
Sück, Leo Edward	Los Angeles	C. E. 127	612 Waverley-p

Sullivan, Owen Malachi	Portland, Ore.	Law 107	Phi Gamma Delta
[1]Summitt, Paul Eugene	Omaha, Neb.	Zool. ‡6	545 Forest-p
Supple, Albert James A. B., Stanford, 1916.	So. Pasadena	Med.gr.	145 Guerrero, SF-sf
[2]Supple, Cornelius Francis, Jr.	S. Pasadena	Geol.	Theta Xi
[1]Supple, Frederic Edward A. B., Stanford, 1917.	S. Pasadena	Law gr.	327 Encina
Suttle, Henry McKie	Viroqua, Wis.	Chem. 63	531 Encina
Sutton, Thomas Leonard	Oakland	Phyl. 8	Alpha Tau Omega
Suydam, Clinton Hamilton	Los Gatos	M. E. 165	514 Encina
[1]Swabey, Marjorie Ruth	Riverside, Ill.	Hist.	381 Hawthorne-p
Swanholm, Keith Henry	Boise, Ida.	C. E. 15	140 Encina
[1]Swarts, Clifton R.	Hermosa Beach	Geol. 95	Alpha Tau Omega
Sweeney, John Paul	Phoenix, Ariz.	Phyl. 104	425 Encina
Sweet, Clytie	Palo Alto	Econ. 15	281 Everett-p
Sweet, Elaine	San Diego	Hist. 108	56 Roble
Swendsen, Harold George	Westhaven	Econ. 57	Sigma Chi
Swift, Charles	Latrobe	C. E. 14	206 Encina
Swift, Thomas Brewster, Jr.	Martinez	M. E. 52.	431 Encina
[1]Swigart, Theodore Earl A. B., Stanford, 1917, Engineer, 1918.	Oakland	C.E.gr.	343 SansomeSt.,SF-sf
Swingle, E. Margaret A. B., Stanford, 1917.	Long Beach	Span. gr.	8 Roble
[1]Sylva, Joseph Lemon M.	Honolulu,T.H.	Law 165	520 Encina
Taber, Anna Florine	Palo Alto	Engl. 61	Chi Omega
[1]Taber, Louise Everett B. S., California, 1914.	San Francisco	Med. gr.	2915 Calif., SF-sf
Taff, Mary Willis	Palo Alto	Hist. 56	628 Cowper-p
[1]Taft, Alan C.	Arcadia, Wis.	Engl. 46	230 Encina
Taintor, Mary Buckley A. B., Ripon, 1911, A. M., 1916.	Ripon, Wis.	Lat. gr.	12 Madrono
Takahashi, Matsuta	Montebello	Phyl. 103	Japanese Club
Takamatsu, Umekichi	Tokyo, Japan	Econ. ‡13	Japanese Club
Takeyama, George Yogoro	Los Angeles	Phyl.-Med. 131	Japanese Club
Talavera, Florencio	Iloilo, P. I.	Phyl. 60	705 Cowper-p
[1]Talbert, Wilford E. A. B., Stanford, 1913, A. M., 1914.	Palo Alto	Educ. gr.	677 Melville-p
Talbot, Sterling J. General Theological Seminary, New York.	Stanford Univ.	Greek gr.	Menlo Heights
Tamiesie, Lura Babette A. B., Pacific University, 1913.	Portland, Ore.	Bact. gr.	Chi Omega
[1]Tauzer, Clarence Jaurgen	Palo Alto	Econ. 60	334 Encina
[1]Taylor, Agnes Stanford	San Francisco	Engl. 165	11 Roble

Taylor, Bernice Eloise	Los Angeles	Ed.-G.A. 11	Delta Delta Delta
Taylor, James Edwin	Hughton, Sask., Can.	Econ. 64	Alpha Tau Omega
Taylor, Ruth Dena	Los Angeles	Engl. 114	Delta Delta Delta
Teeter, Arthur Lewis A. B., Indiana, 1911.	Monticello, Ind.	Med. gr.	2102 Calif., SF-sf
Tegner, William Evers	Laramie, Wyo.	Law 173	541 Encina
Teitsworth, Clark Salem	Los Angeles	Chem. 88	Alpha Delta Phi
Templeton, Bruce King	Downey	Chem. 10	234 Encina
[1]Templeton, Robert Lyman	Downey	Law 87	317 Encina
Templin, Ernest Hall	Rupert, Ida.	Lat. 67	603 Waverley-p
Terman, Frederick Emmons	Stan. Univ.	M. E. 39	9 Dolores
[2]Teubner, Charles William	San Francisco	Econ.	Stanford Park
Thayer, Wheeler Hall	San Francisco	Geol. 40	Zeta Psi
Therkelsen, Mary Dorthea	Portland, Ore.	Fr. 102	Kappa Kappa Gamma
Thomas, Frank Newton, Jr.	Pasadena	Econ. 70	16 Encina
Thomas, Gerald C.	Imperial	Law 106	401 Encina
Thomas, Vera Margaret	San Jose	Engl. 150	Madrono
[2]Thomason, Ira Leroy A. B., Stanford, 1917.	Los Angeles	Law gr.	557 Encina
Thompson, Edith Rawcliffe A. B., Stanford, 1917.	Los Angeles	Chem. gr.	10 Roble
[2]Thompson, Georgia	Monkland, Ore.	Hist.	5 Madrono
Thompson, Jane Mary	Pasadena	Bact. ‡105	19 Salvatierra
Thompson, John Hamer A. B., Stanford, 1918.	Mayfield	Educ. gr.	Mayfield-m
Thompson, Leonard Ramsey B. S., Washington, 1916.	Napa	Med. gr.	Encina
Thompson, Percy Vernon	Los Angeles	Phyl. 64	244 Encina
[1]Thrapp, Eldridge R.	Los Angeles	Econ. 170	Kappa Sigma
Thrash, Jessee E.	Meridian	Econ. 15	345 Encina
[1]Thygeson, Elling	Palo Alto	Math.	222 Kingsley-p
Thygeson, Ruth Adelaide A. B., Minnesota, 1916.	Palo Alto	Med. gr.	222 Kingsley-p
Tillson, Ralph Stewart	Rocky Ford, Colo.	M. E. 8	22 Lasuen
Timbres, Harry G.	Edmonton, Alta., Can.	Hist. 17	Freeman's Farm-p
Tisné, Roland David	San Francisco	M. E. 12	40 Encina
[1]Tofflemire, Joseph Benjamin	Camino	Chem.	223 Cowper
[1]Toft, George William	Mountain View	Phyl. 8	Mountain View-mv
[2]Togosaki, Kazue	San Francisco	Zool. ‡	31 Salvatierra
Tolman, Mary	Belfry, Mont.	Chem. 60	17 Kingscote Apts.
Tompkins, Bernice Brooks A. B., Stanford, 1917.	San Jose	Sc. Ed. gr.	19 Salvatierra
Tompkins, Henry Mace	Sunnyvale	Phyl. 7	356 Kingsley-p

Tompkins, Vivian Lee	San Jose	Hist. 101	Kappa Alpha Theta
[1]Torrance,Lewis Curtis,Jr.	LosAngeles	Phyl.33	Sigma Alpha Epsilon
Tournat, Waldo Emerson	Garden Grove	Econ. 13	Alpha Tau Omega
Townley, Lucile	Stanford Univ.	Ger. 157	33 Salvatierra
Townley, Mary Isabel	Stanford Univ.	Econ. 57	33 Salvatierra
[3]Townsley,SidneyCliftonColo.Spgs.,Colo		Chem. 105	123 Encina
[2]Townsend, Arthur Irving	Merced	Econ.	247 Encina
Trenkle,HowardRaymond	FarmerCy,Ill.	Econ. 15	221 Encina
[1]Tresidder, Donald Bertram	Tipton,Ind.	Phyl.-Med.111	13 Salvatierra
[1]Triplett, Stanley Floyd	Ceres	Econ. 50	539 Encina
Trist, Marian Abigail	Burlingame	Fr. 13	Chi Omega
[1]Troeger, Richard Glen	Los Angeles	Hist. 95	42 Encina
Tuck, Joy Edwarda A. B., Stanford, 1917	Redlands	Sc. Ed. gr.	4 Roble
Tufts, John Marshall A. B., Stanford, 1916.	San Francisco	Med. gr.	16 17th Av., SF-sf
Turner, Edmond Sewall	Portland, Ore.	M. E. 109	Alpha Delta Phi
[2]Turner, Frank Seymour	San Francisco	Econ.	Zeta Psi
Turner, Mildred Hahmann	Santa Rosa	Math. 154	26 Roble
Tuthill, Mary Van Wyck	San Jose	Econ. 60	Delta Delta Delta
[2]Twombly, Harriet Elizabeth A. B., Stanford, 1908.	San Jose	Med.gr.	1582 Alameda,SJ-sj
[1]Tyler, Arthur Robert	Pomona	C. E. 4	567 Lincoln-p
Tyree, Walter Overall	Kansas City, Mo.	Chem. ‡12	11 Salvatierra
Uchizono, Tomosuke	Los Angeles	Chem. 50	Japanese Club
[1]Upton, Clark Camp, Jr.	Spokane, Wn.	Pre L. 46	19 Encina
Utahara, Frank Sadaji	San Francisco	M. E. 13	Japanese Club
[2]Utt, Anita Lee	Pala	Span. 87	11 Alvarado
Vail, Edwin Holloway	Palo Alto	Econ. 17	333 Channing-p
Van Clief, Harold Maxwell	Lompoc	Geol. 12	109 Encina
Vanderburgh, Chester Marion A. B., Stanford, 1915.	Madera	Med. gr.	2102 Clay, SF-sf
Vandergon, Edward John	Campbell	Econ. 13	208 Encina
Van Dyke, Fred	Ukiah	Geol. 8	Encina
Van Gorden, Horace Jerome	Palo Alto	Econ. 159	222 Encina
[1]VanRiper,JosephineC.	KlamathFalls,Or	Econ. ‡13	6 Roble
[2]Varnum, Richard Boyd	Oakland	M. E.	19 Salvatierra
Venske, Harold Henry	Glendale	Econ. 13	113 Encina
Vesco, George	Dawson, Y. T., Can.	M. E. 12	420 Encina
Vickery, Frederick Paul B. S., California, 1905.	Saratoga	Geol. gr.	364 Kingsley-p
Vietor, Lynn Albert	Eureka	Chem. 60	Phi Kappa Sigma

Vincenz, Jean Lacey	Fresno	C. E. 159	437 Kipling-p
Visel, Ruth Angele	Santa Ana	Hist. ‡24	Kappa Alpha Theta
Voris, Ruth Irene	Long Beach	Ger. 64	10 Roble
Vredenburgh, Genevieve Newman A. B., Pomona, 1917.	Chino	Sc. Ed. gr.	2 Madrono
Vreeland, Marion Elizabeth	San Diego	Engl. 13	Sigma Kappa
[2]Wadsworth, James Milton A. B., Stanford, 1910.	San Francisco	C. E. gr.	2649 Russell, B'kly-b
[2]Wagener, Winifred Lyle	Ceres	Econ.	Roble
Wagner, Frances Mitchell	Los Angeles	Span. 14	Madrono
Wakefield, Cecil Ray A. B., Stanford, 1916.	Palo Alto	Law gr.	127 Lytton-p
Waldo, Carmalete	Los Angeles	Fr. 14	35 Roble
Waldo, John Henderson	Pasadena	Law 114	Alpha Tau Omega
Walker, Dean McLaughlin	Willows	Phyl. 12	Phi Kappa Psi
[2]Walker, Gladys Lucile A. B., Stanford, 1917.	Oakland	Engl. gr.	Sigma Kappa
[1]Wallace, Davis McQuat	Palo Alto	Bot. 14	483 Hawthorne-p
Wallace, Whittier Worthington	San Jose	Math. 15	857 S.2nd.SJ-sj
Walsh, Dorothy Leeds	San Mateo	Span. 104	Kappa Alpha Theta
Walter, Arthur	Slatsop, Wn.	Math. 150	42 Encina
Walter, John Kopplin S.	SantaFe, N.M.	Econ. ‡13	660 Waverley-p
Walter, Paul Alfred F., Jr.	SantaFe, N.M.	Engl. 13	660 Waverley-p
[2]Ward, Harold Lee	Orchard Lake, Mich.	Fr. 39	Alpha Delta Phi
Ware, John Sandford	Durango, Colo.	M. E. 109	530 Encina
[1]Wark, Thomas Leslie	Long Beach	Geol. 96	Beta Theta Pi
[1]Warnock, Archibald Wilson	Palo Alto	Zool. 158	781 Channing-p
Warren, Arthur Fulton	San Jose	Phyl. 101	245 S. 12th, SJ-sj
Wass, Warren Herbert	Santa Barbara	C. E. 154	432 Encina
Waterman, Ella Margaret	Stanford Univ.	Zool. 10	16 Kingscote Apts.
Watson, Ernest William	Sunnyvale	M. E. 13	Sunnyvale-s
Watson, Leslie James	Sunnyvale	C. E. 151	309 Encina
Watters, Hallie	Palo Alto	Greek 18	411 Kipling-p
[2]Watters, Marjorie Dennison	Los Angeles	Hist.	49 Roble
Watts, Frank Albert	East San Gabriel	C. E. 99	Theta Xi
Wayland, Charles Rucker	San Jose	PreL. 61	Phi Kappa Psi
Weaver, Esther Leah	Fresno	Math. 13	23 Madrono
[2]Weaver, Donald Kessler	La Porte, Ind.	Chem. 63	Phi Kappa Psi
[1]Weaver, Landis Osburn	Fresno	PreL. 121	Delta Tau Delta
Weber, Irma Altha	Lankershim	Psych. 104	52 Roble
Webster, Beatrice M.	Los Angeles	Math. 153	17 Madrono
[1]Wedekind, Richard Eldon	Chico	Law 84	224 Encina

[1]Weeks, Foster William	Oakland	Econ. 95	126 Encina
Weeks, Pearl May	South Pasadena	Phys. gr.	567 Lincoln
A. B., Stanford, 1916.			
[1]Weidemann, Charles Conrad	Florin	Math. gr.	127 Encina
A. B., College of the Pacific, 1917.			
Weil, Alita	Sacramento	Ent. 88	Alpha Phi
Weitzel, Elmer Louis	Pueblo, Colo.	Econ. 63	203 Encina
Welch, Josephine	Colusa	Law 156	Pi Beta Phi
[1]Welch, Robert Johnson	Oakland	Law 178	Beta Theta Pi
Welker, Benjamin Lee, Jr.	Caliente, Nev.	M. E. 77	El Camino
Weller, John Parsons	Lowell, Mass.	Fr. ‡11	338 Encina
Wellman, Whittier Will	Los Altos	Engl. 53	107 Encina
Wells, Clinton Fisk	San Jose	Educ. 80	Campus School
[1]Wells, Herbert Sessions	Haiku, Maui, TH.	PreL. 57	540 Encina
Wells, Marjorie Ferguson	Pasadena	Latin 15	521 Webster-p
[1]Wells, Willard Bruce	Portland, Ore.	C. E. 45	Alpha Delta Phi
Wemra, Seitarow	San Francisco	M. E. gr.	Japanese Club
A. B., Stanford, 1918.			
Wende, Simon Fraser Tolmie	Buffalo, N.Y.	Econ. ‡16	223 Encina
Wescott, Ruth Avery	Alhambra	Ger. 12	31 Roble
West, Eva	Riverside	Hist. 13	32 Roble
West, Frank Gordon	Santa Ana	Law 96	218 Encina
West, Nevada Loraine	Grafton	Engl. 15	Alpha Omicron Pi
Westbie, Nina Ann	San Francisco	Engl. 163	Pi Beta Phi
[1]Westerman, Helen	Sutter Creek	Econ. 182	21 Roble
A. B., Stanford, 1918.			
[2]Weston, Ralph Emerson	Mayfield	Phys.	Mayfield-m
Westwick, Atwell George	Santa Barbara	Law 99	217 Encina
[1]Wetherby, Christine	Pasadena	Ger. 81	951 Hamilton-p
[1]Weyer, Fred William	Wallace, Ida.	Chem. ‡15	522 Encina
Weymouth, Frank Walter	Stanford Univ.	Zool. gr.	3 Salvatierra
A. B., Stanford, 1909, A. M., 1911.			
[1]Whealton, Roland Gardner	Long Beach	Geol. 103	Kappa Alpha
[2]Wheeler, Pauline Gertrude	Redlands	Engl. ‡	Roble
Whitaker, Clifford Warren	Portland, Ore.	Phyl. 8	Phi Delta Theta
White, Charles Eldon	Palo Alto	Chem. 102	604 Everett-p
White, John BeVier	Selma	Phyl. 55	215 Encina
[1]White, Lewis Edmund	Redding	Educ. 166	Theta Xi
White, Major A.	North Platte, Neb.	Phyl. 63	125 Encina
White, Minor	San Dimas	Engl. 26	Alpha Sigma Phi
Whitmer, Wilson Ambrose	Palo Alto	Ed.-G.A. 5	Kappa Alpha
[2]Whitney, George Henry	Stockton	M. E. 52	29 Encina

Whittelsey, Stuart Gordon	San Diego	Econ. 63	Kappa Alpha
[2]Whittemore, John Reboul, Jr.	Sta. Barbara	M. E.	333 Encina
[1]Whittier, Florence Oliver	Stanford Univ.	Chem. 11	Menlo Heights
Whittier, Winifred C.	Stanford Univ.	Law gr.	Menlo Heights
A. B., Stanford, 1895.			
[1]Whittlesey, Robin	Paradise	Geol. 34	Alpha Sigma Phi
Wickersham, Harry Pennock	Los Angeles	M. E. 54	Kappa Sigma
Wickersham, Zelda Louise	Palo Alto	Fr. 55	257 Webster-p
[1]Widell, Berndt A.	Ft. Leavenworth, Kan.	M. E. 197	447 Encina
A. B., Stanford, 1918.			
Wilbur, Lyman Dwight	Los Angeles	C. E. 16	111 Encina
Wilkie, Alfred Daniel	Los Angeles	Engl. 82	Delta Tau Delta
Wilkie, John Howard	Los Angeles	C. E. 54	Beta Theta Pi
[1]Wilkie, Laura Elizabeth	Truckee	Ger. 180	Alpha Omicron Pi
A. B., Stanford, 1918.			
[1]Willard, Nancy Lee	Los Angeles	Hist. 180	Kappa Alpha Theta
A. B., Stanford, 1918.			
Willcox, John Frederick	Redwood City	M. E. 59	R.F.D., Redwood-r
[2]Willett, Dorothy Grace	Berkeley	Hist. ‡	Roble
[1]Williams, Alice Whitney	Los Angeles	Chem. 148	13 Kingscote Apts.
Williams, Arthur Lionel	Cosmopolis, Wn.	M. E. 14	142 Encina
Williams, Catherine Elizabeth	Los Angeles	Econ. 106	Pi Beta Phi
[2]Williams, Collis Howard	Palo Alto	Econ.	Hamilton Ext.-p
Williams, Philip Samuel	Ontario	Chem. 116	331 Encina
Williams, Thomas Bertram	San Gabriel	Phyl. 8	Alpha Tau Omega
[1]Williams, William Lloyd	Danville	M. E. 53	235 Encina
Williamson, Freder'k Warren	Los Angeles	Law 96	Alpha Delta Phi
[2]Williamson, Helen Lucile	Hopland	Phyl. gr.	Roble
A. B., Stanford, 1917.			
Willimann, Edwin	Menlo Park	Engl. gr.	Menlo Park-m
A. B., Stanford, 1917.			
Willis, Cornelius Grinnell	Stanford Univ.	Chem. 93	5 Lasuen
Willis, Frances Elizabeth	Redlands	Hist. 60	Alvarado Hall
Willis, Robin	Stanford Univ.	Econ. 39	5 Lasuen
Willoughby, Olive Mildred	San Jose	Zool. 151	360 S. 9th, SJ-sj
Wilson, Alice Lolita	Davenport, Wn.	Fr. 15	63 Roble
Wilson, Arthur Francis	Hollister	C. E. 151	432 Encina
Wilson, Guy C	Winters	Phil. 34	562 Encina
Wimberly, Floyd Tyrus	Ontario	Econ. 5	95 Encina
Winder, Louise	Los Angeles	Fr. 155	Delta Gamma
Wing, Robert Lewis	Palo Alto	C. E. 108	Chi Psi
Wingood, Elsie Katherine	Santa Ana	Span. gr.	Sigma Kappa
A. B., Stanford, 1917.			

Winham, Edgar Snyder	Salinas	C. E. 106	Delta Upsilon
Winham, William Pitt L.	Salinas	C. E. 88	Delta Upsilon
[2]Winkle, Sarah Dorothy Lucia	Salinas	Econ.	81 Roble
[2]Wipperman,ClaraAlice	IdahoFalls,Ida.	Engl. ‡	Madrono
Wise, David Clarence	Carthage, Mo.	Chem.-Med. 154	58 Encina
Wise, James Dougan	Los Angeles	PreL. 62	545 Encina
Wislizenus, Lucy Carvell	Los Angeles	Lat. 85	Delta Delta Delta
[1]Wolf, Leslie Milton A. B., Stanford, 1917.	San Diego	Geol. gr.	Phi Kappa Psi
[1]Wolfard, Catlin A. B., Stanford, 1918.	Portland, Ore.	Law 184	Beta Theta Pi
[2]Wong, Shiu Kei	Canton, China	Econ. 94	251 Hamilton-p
Wood, Abbie Elveni	Palo Alto	Span. 119	Alpha Omicron Pi
Wood, Dorothy Augusta A. B., Stanford, 1915.	San Francisco	Med. gr.	2401 Sac'to,SF-sf
Wood, Elizabeth Compton	Palo Alto	Econ. 149	Alpha Omicron Pi
Wood, Gardner Porter	Palo Alto	PreL. ‡61	750 Bryant-p
Wood, Grace Mary A. B., Stanford, 1917.	Mayfield	Fr. gr.	Mayfield-m
Wood,James,Jr.	WhtSulph'rSpgs.,Mont.	Geol. 155	Delta Upsilon
[1]Wood, John Edwin	Newman	Econ. ‡	527 Everett-p
Wood, Margaret Elizabeth	Saratoga	Hist. 147	Alpha Phi
Wood, Melvin V.	Jackson	Hist. 15	Kappa Alpha
Wood, William Farlin	Mayfield	M. E. 113	Mayfield-m
Woodbridge,Elizabeth A. B., Vassar, 1907.	W'amst'wn Mass.	Fr. gr.	7 Salvatierra
[2]Woods, Leonard A. B., California, 1917.	Berkeley	Med. gr.	507 Encina
Woodward,Ross Eardly	Spokane,Wn.	C. E. 12	Alpha Delta Phi
Woodward, Violette Olivia	Santa Clara	Engl. 142	1358 SantaSlara-sc
Wooster, Hiram Ferris	Vancouver,B.C.	C. E. 12	Phi Delta Theta
[1]Wormser, Mary A. B.. Stanford, 1913.	San Francisco	Hist. gr.	980 Bush, SF-sf
[2]Worthington, James Henry M. A., Oxford, 1910.	Alton,Eng.	Phys. gr.	Vendome, SJ-sj
[2]Wrenn, Heaton Luse	Burlingame	Econ. 770	Walnut,B'lingame-b
[1]Wright,CharlesWilliam A. B., Queens, 1915.	Vancouver,B.C.	Engl. gr.	332 Channing-p
Wright,EdwardAugustine	Los Angeles	C. E. 92	11 Salvatierra
[1]Wright, Fay Linton	Santa Ana	M. E. 116	Theta Delta Chi
[1]Wright, Harold D. A. B., Stanford, 1918.	Los Angeles	M. E. 202	349 Encina
Wright, Kenneth A.	Pasadena	Geol. 13	Zeta Psi

Wright, Natalie	Los Angeles	Ger. 155	Chi Omega
[1]Wulff, Horace Byington	Sacramento	Law. 99	Phi Kappa Sigma
[2]Yamada, So Sabro A. B., Stanford, 1916.	Sendai, Japan	Med. gr.	Japanese Club
Yamate, Sasato	Hiroshima, Japan	Econ. 47	Japanese Club
Yates, Claude Oscar	Alameda	Econ.195	SigmaAlphaEpsilon
[1]Yewell, Paul Ridout	Los Angeles	Geol. 166	Alpha Sigma Phi
Young, Isabelle Gibson	Albany, Ore.	Hist. 79	Kappa Alpha Theta
[2]Young, Julia Porter	Stockton	Econ.15	Kappa KappaGamma
Young,RaymondWilliam	St.Joseph,Mo.	M. E. ‡5	534 Forest-p
Younger, Virginia	Palo Alto	Econ. 13	KappaKappaGamma
Younglove, Helen	Riverside	Math. 15	Alpha Phi
Zafra, Urbano Alviar	La Union, P. I.	Chem. 15	1101 Emerson-p
[2]Zeidler, Evan Verle	Rockwell, Ia.	PreL. 100	660 Waverley-p
Zeitlin, Marion Albert	Douglas, Ariz.	Fr. 133	358 Encina
[1]Zeorian, Solomon	Los Angeles	Econ. ‡	52 Encina
[2]Zimmerman, Anna Benton A. B., Stanford, 1916.	Palo Alto	Sc. Ed. gr.	251 Webster-p
Zimmerman, Helen Portia	Fremont, O.	Econ. 14	16 Madrono
Zvenigrad, Abraham A. B., Stanford, 1916.	New York, N. Y.	Hist. gr.	College Terrace

SUMMARIES

Officers

Trustees		15
Academic Council—rank of		
Professor	67	
Associate Professor	31	
Assistant Professor	35	
Total (less 27 absent on leave)		106
Other Teaching and Administrative Officers—rank of		
Emeritus Professor	9	
Clinical Professor	8	
Associate Clinical Professor	4	
Assistant Professor	9	
Assistant Clinical Professor	12	
Lecturer	8	
Instructor	57	
Clinical Instructor	18	
Total (less 20 absent on leave)		105
Assistants		
Instruction	32	
Administration	7	
Medical School	26	
Library	17	
Technical	22	
Total (less 5 absent on leave)		99
Grand total		325

Students

	AUTUMN QUARTER	WINTER QUARTER	FOR BOTH QUARTERS
Graduates	207	205	249
Undergraduates	1337	1187	1446
Special Students	24	14	23
Totals	1568	1406	1718

By Major Subjects—Autumn and Winter Quarters

	Graduate	Under-graduate	Special	Total
Bacteriology and Experimental Pathology	3	12	—	15
Botany	2	8	—	10
Chemistry	8	141	1	150
Engineering—Civil	7	65	2	74
—Electrical	4	1	—	5
—Mechanical	5	129	3	137
Economics	5	279	6	290
Education—School of	15	—	—	80
—Division of	18	18	—	
—Graphic Art	2	27	—	
English	23	109	—	132
Entomology	1	7	—	8
Geology and Mining	7	67	4	78
Germanic Languages	4	27	—	31
Greek	1	8	—	9
History	14	119	1	134
Latin	5	18	—	23
Law—Professional	24	84	1	174
—Pre-Legal	—	64	1	
Mathematics	3	31	—	34
Medicine	69	†24	—	†93
Philosophy	2	7		9
Physics	8	5	-	13
Physiology and Histology	3	90	2	95
Psychology	2	7	1	10
Romanic Languages	10	98		108
Zoology	4	19	-	23

† Also registered as Physiology majors, 13; as Chemistry majors, 2; as Bacteriology majors, 4.

By Residence—For Both Quarters

California	1308	Kansas	6	Louisiana	1
Oregon	55	Minnesota	6	North Carolina	1
Washington	46	Texas	6	Oklahoma	1
Colorado	25	Wyoming	6	Vermont	1
Arizona	24	Massachusetts	5	West Virginia	1
Idaho	22	New Mexico	5	Japan	23
Nevada	15	Pennsylvania	5	Canada	14
Illinois	13	Hawaii	4	China	7
Iowa	13	Michigan	4	Mexico	2
Utah	12	North Dakota	4	South America	2
Montana	10	Ohio	3	Central America	1
New York	10	South Dakota	3	England	1
Missouri	9	Alaska	2	India	1
Philippine Islands	9	Connecticut	2	Persia	1
Wisconsin	9	Tennessee	2	Samoa	1
Nebraska	7	Washington, D. C.	2	West Australia	1
Indiana	6	Alabama	1		

ALUMNI ASSOCIATION

[Organized June 15, 1892]

CONSTITUTION

(As amended, 1908-17)

IN order to promote the interests of the University, to secure unity among its graduates, and to foster an attachment to our *Alma Mater,* we do hereby constitute ourselves an association to be known as the Alumni Association of the Leland Stanford Junior University.

I. MEMBERSHIP

1. All persons who have received a degree from the Leland Stanford Junior University are members of this Association.

2. All members of the Faculty are honorary members of this Association.

II. OFFICERS

1. The officers of this Association shall be: (1) a President; (2) a Vice-President; (3) a Secretary-Treasurer; (4) an Executive Committee consisting of the Secretary-Treasurer and four other elected members, one of whom shall be designated as Chairman; and (5) an Advisory Board, consisting of the President, the Secretary-Treasurer, one representative elected by the graduating class for the term of one year, and nine elected members who shall be graduates of five years' standing, and who shall be elected for three-year terms. . . . The Advisory Board shall elect its President and Secretary.

2. All other officers shall serve for one year or until their successors are elected.

III. DUTIES OF OFFICERS

1. It shall be the duty of the President to preside at all business meetings of the Association, to deliver the President's address on Alumni Day, and to perform such other duties as usually belong to his office.

2. It shall be the duty of the Vice-President to preside in the absence of the President and to perform the other duties belonging to his office.

3. It shall be the duty of the Secretary-Treasurer to keep accurate minutes of the meetings of the Association and to act as Secretary of the Executive Committee, of which he shall be a member.

4. It shall also be the duty of the Secretary-Treasurer to have charge of the collection and disbursement of the funds of the Association.

5. The Secretary-Treasurer shall be allowed ten per cent of all dues or assessments collected, as compensation for his services.

6. It shall be the duty of the Executive Committee to arrange for the programme to be presented on Alumni Day; or any programme for other public occasions; to regulate the finances of the Association; to perform such other duties as may be imposed upon it; and to attend to all business of the Association not otherwise provided for.

7. It shall be the duty of the Advisory Board, when deemed advisable, to consult alumni, undergraduates, faculty, and trustees, and to make recommendations regarding the welfare of the University and of the Alumni Association.

IV. COMMITTEES

1. The President shall be ex-officio a member of all committees.

2. At each annual business meeting the President shall appoint a committee of two persons to audit the Treasurer's accounts.

V. ELECTIONS

1. The February issue of the *Stanford Illustrated Review* shall give notice of the annual nomination and election of officers of this Association. Said notice shall contain the names of the incumbent officers and shall indicate the hold-over members of the Advisory Board, and shall contain in full the provisions of this Constitution relating to nominations and elections.

2. Nominations in writing, signed by at least twenty members, shall be required for any nomination. Nominations shall be forwarded to the Secretary-Treasurer between the first day of February and the first day of April of each year. On or before the fifteenth day of April of each year, the Secretary-Treasurer shall mail to every member of this Association whose dues for the current year have been paid, an official ballot containing all the nominations, with the addresses of the nominees and the number of proposers of each, and said ballot shall be published in the April issue of the *Stanford Illustrated Review,* provided, however, that where no contests occur, the Secretary-Treasurer shall be empowered to cast the ballot.

3. Officers shall be elected at an annual election to be held at Stan-

ford University on Alumni Day, between the hours of nine o'clock a. m. and twelve o'clock noon. The Executive Committee shall have charge of the election. The elector may cast a written ballot in person, or by mail addressed to the Secretary-Treasurer, marked "Ballot" and disclosing the sender's name, and enclosing a ballot in a plain envelope. Ballots so received shall be opened and cast only during the hours of election. The respective candidates receiving the highest number of votes shall be declared elected. A tie vote shall be decided by lot.

4. No one whose annual dues are in arrears for the current year shall be entitled to vote or to hold office.

VI. DUES

The dues of the Association shall be $1.25 per year for each member thereof, which amount shall include a subscription to the *Stanford Illustrated Review.*

Provided, however, that all members who, prior to May, 1908, have paid $5 shall be exempted from further dues.

VII. MEETINGS

Meetings of the Association may be called by the President or by petition of twenty members, said meetings to be held at Stanford University.

VIII. AMENDMENTS

Any proposition to alter or amend these Articles of Association must be proposed in writing, signed by twenty members, and submitted to the members by mail in printed form by the Secretary-Treasurer, and voted upon in the same manner as are nominations for officers, and adopted by a majority vote.

OFFICERS OF THE ASSOCIATION, 1917-18

President—RICHARD WATTS BARRETT, '04.

Vice-President—JOHN FRANCIS SHEEHAN, '05.

Secretary-Treasurer—JOHN EZRA MCDOWELL, '00.

Executive Committee—OTTO KARL GRAU, '07, Chairman; ROY JAMES GLENDENNING, '11; CARL FRANKLIN BRAUN, '07; DAVID HENRY WALKER, '10; JOHN EZRA MCDOWELL, '00.

Advisory Board—WILLIAM HENRY BEGBIE FOWLER, '06, Chairman; ALICE WINDSOR KIMBALL, '04, Secretary; ELMER RUEL AMES, '17; RICHARD WATTS BARRETT, '04; GILBERT DENISON BOALT, '03; ELMER GEORGE BRUA, '04; MYRON ARLIE FOLSOM, '96; WALTER RALIEGH HAMILTON, '04; JOHN EZRA MCDOWELL, '00; EDITH RONALD MIRRIELEES, '07; HORACE POMEROY, '07; ALFRED BAKER SPALDING, '96.

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